

SEQUENCE LISTING

<110> Anderson, David J.
Dong, Xinzhong
Zylka, Mark
Simon, Melvin
Han, Sang-kyou

<120> PAIN SIGNALING MOLECULES

<130> CALTE.004C1

<150> US 60/222,344

<151> 2000-08-01

<150> US 60/202,027

<151> 2000-05-04

<150> US 09/704,707

<151> 2000-11-03

<150> US unknown

<151> 2001-04-19

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<170> FastSEQ for Windows Version 4.0

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<220>

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Met

1

gac aat acc atc cct gga ggt atc aac atc acg att ctg atc cca aac 165

Asp Asn Thr Ile Pro Gly Gly Ile Asn Ile Thr Ile Leu Ile Pro Asn

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ttg atg atc atc atc ttc gga ctg gtc ggg ctg aca gga aat ggc att 213

Leu Met Ile Ile Ile Phe Gly Leu Val Gly Leu Thr Gly Asn Gly Ile

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gtg ttc tgg ctg ctg ggc ttc tgt ttg cac agg aac gcc ttc tca gtc 261

Val Phe Trp Leu Leu Gly Phe Cys Leu His Arg Asn Ala Phe Ser Val

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tac atc cta aac tta gct cta gct gac ttc ttc ttc ctc cta ggt cac	309
Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Phe Phe Leu Leu Gly His	
50 55 60 65	
atc ata gat tcc ata ctg ctt ctt ctc aat gtt ttc tac cca att acc	357
Ile Ile Asp Ser Ile Leu Leu Leu Leu Asn Val Phe Tyr Pro Ile Thr	
70 75 80	
ttt ctc ttg tgc ttt tac acg atc atg atg gtt ctc tat atc gca ggc	405
Phe Leu Leu Cys Phe Tyr Thr Ile Met Met Val Leu Tyr Ile Ala Gly	
85 90 95	
ctg agc atg ctc agt gcc atc agc act gag cgc tgc ctg tct gta ctg	453
Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val Leu	
100 105 110	
tgc ccc atc tgg tat cac tgt cac cgc cca gaa cac aca tca act gtc	501
Cys Pro Ile Trp Tyr His Cys His Arg Pro Glu His Thr Ser Thr Val	
115 120 125	
atg tgt gct gtc atc tgg gtc ctg tcc ctg ttg atc tgc att ctg aat	549
Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile Leu Asn	
130 135 140 145	
agt tat ttc tgc ggt ttc tta aat acc caa tat aaa aat gaa aat ggg	597
Ser Tyr Phe Cys Gly Phe Leu Asn Thr Gln Tyr Lys Asn Glu Asn Gly	
150 155 160	
tgt ctg gca ttg aac ttc ttt act gct gca tac ctg atg ttt ttg ttt	645
Cys Leu Ala Leu Asn Phe Phe Thr Ala Ala Tyr Leu Met Phe Leu Phe	
165 170 175	
gtg gtc ctc tgt ctg tcc agc ctg gct ctg gtg gcc agg ttg ttc tgt	693
Val Val Leu Cys Leu Ser Ser Leu Ala Leu Val Ala Arg Leu Phe Cys	
180 185 190	
ggg act ggg cag ata aag ctt acc aga ttg tat gta acc att att ctg	741
Gly Thr Gly Gln Ile Lys Leu Thr Arg Leu Tyr Val Thr Ile Ile Leu	
195 200 205	
agc att ttg gtt ttt ctc ctt tgc gga ttg ccc ttt ggc atc cac tgg	789
Ser Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile His Trp	
210 215 220 225	
ttt ctg tta ttc aag att aag gat gat ttt cat gta ttt gat ctt gga	837
Phe Leu Leu Phe Lys Ile Lys Asp Asp Phe His Val Phe Asp Leu Gly	
230 235 240	
ttt tat ctg gca tca gtt gtc ctg act gct att aat agc tgt gcc aac	885
Phe Tyr Leu Ala Ser Val Val Leu Thr Ala Ile Asn Ser Cys Ala Asn	
245 250 255	
ccc atc att tac ttc ttc gtg gga tcc ttc agg cat cgg ttg aag cac	933
Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg His Arg Leu Lys His	
260 265 270	
cag acc ctc aaa atg gtt ctc cag aat gca ctg caa gac act cct gag	981

Gln Thr Leu Lys Met Val Leu Gln Asn Ala Leu Gln Asp Thr Pro Glu
 275 280 285

aca gcc aaa atc atg gtg gag atg tca aga agc aaa tca gag cca 1026
 Thr Ala Lys Ile Met Val Glu Met Ser Arg Ser Lys Ser Glu Pro
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 ac 1088

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 Ile Val Phe Trp Leu Leu Gly Phe Cys Leu His Arg Asn Ala Phe Ser
 35 40 45
 Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Phe Phe Leu Leu Gly
 50 55 60
 His Ile Ile Asp Ser Ile Leu Leu Leu Leu Asn Val Phe Tyr Pro Ile
 65 70 75 80
 Thr Phe Leu Leu Cys Phe Tyr Thr Ile Met Met Val Leu Tyr Ile Ala
 85 90 95
 Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val
 100 105 110
 Leu Cys Pro Ile Trp Tyr His Cys His Arg Pro Glu His Thr Ser Thr
 115 120 125
 Val Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile Leu
 130 135 140
 Asn Ser Tyr Phe Cys Gly Phe Leu Asn Thr Gln Tyr Lys Asn Glu Asn
 145 150 155 160
 Gly Cys Leu Ala Leu Asn Phe Phe Thr Ala Ala Tyr Leu Met Phe Leu
 165 170 175
 Phe Val Val Leu Cys Leu Ser Ser Leu Ala Leu Val Ala Arg Leu Phe
 180 185 190
 Cys Gly Thr Gly Gln Ile Lys Leu Thr Arg Leu Tyr Val Thr Ile Ile
 195 200 205
 Leu Ser Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile His
 210 215 220
 Trp Phe Leu Leu Phe Lys Ile Lys Asp Asp Phe His Val Phe Asp Leu
 225 230 235 240
 Gly Phe Tyr Leu Ala Ser Val Val Leu Thr Ala Ile Asn Ser Cys Ala
 245 250 255
 Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg His Arg Leu Lys
 260 265 270
 His Gln Thr Leu Lys Met Val Leu Gln Asn Ala Leu Gln Asp Thr Pro
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<220>
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<222> (137)...(1051)

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agtgacaaca aatcca atg gac gaa acc ctc cct gga agt atc aac att agg 172
Met Asp Glu Thr Leu Pro Gly Ser Ile Asn Ile Arg

1 5 10

att ctg atc cca aaa ttg atg atc atc atc ttc gga ctg gtc gga ctg 220
Ile Leu Ile Pro Lys Leu Met Ile Ile Ile Phe Gly Leu Val Gly Leu
15 20 25

atg gga aac gcc att gtg ttc tgg ctc ctg ggc ttc cac ttg cgc aag 268
Met Gly Asn Ala Ile Val Phe Trp Leu Leu Gly Phe His Leu Arg Lys
30 35 40

aat gac ttc tca ctc tac atc cta aac ttg gcc cgg gct gac ttc ctt 316
Asn Asp Phe Ser Leu Tyr Ile Leu Asn Leu Ala Arg Ala Asp Phe Leu
45 50 55 60

ttc ctc ctc agt agt atc ata gct tcc acc ctg ttt ctt ctc aaa gtt 364
Phe Leu Leu Ser Ser Ile Ile Ala Ser Thr Leu Phe Leu Leu Lys Val
65 70 75

tcc tac ctc agc atc atc ttt cac ttg tgc ttt aac acc att atg atg 412
Ser Tyr Leu Ser Ile Ile Phe His Leu Cys Phe Asn Thr Ile Met Met
80 85 90

gtt gtc tac atc aca ggg ata agc atg ctc agt gcc atc agc act gag 460
Val Val Tyr Ile Thr Gly Ile Ser Met Leu Ser Ala Ile Ser Thr Glu
95 100 105

tgc tgc ctg tct gtc ctg tgc ccc acc tgg tat cgc tgc cac cgt cca 508
Cys Cys Leu Ser Val Leu Cys Pro Thr Trp Tyr Arg Cys His Arg Pro
110 115 120

gta cat aca tca act gtc atg tgt gct gtg atc tgg gtc cta tcc ctg 556
Val His Thr Ser Thr Val Met Cys Ala Val Ile Trp Val Leu Ser Leu
125 130 135 140

ttg atc tgc att ctg aat agc tat ttc tgt gct gtc tta cat acc aga 604
Leu Ile Cys Ile Leu Asn Ser Tyr Phe Cys Ala Val Leu His Thr Arg
145 150 155

tat gat aat gac aat gag tgt ctg gca act aac atc ttt acc gcc tcg 652
Tyr Asp Asn Asp Asn Glu Cys Leu Ala Thr Asn Ile Phe Thr Ala Ser
160 165 170

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Tyr Met Ile Phe Leu Leu Val Val Leu Cys Leu Ser Ser Leu Ala Leu

175	180	185	
ctg gcc agg ttg ttc tgt ggc gct ggg cag atg aag ctt acc aga ttt			748
Leu Ala Arg Leu Phe Cys Gly Ala Gly Gln Met Lys Leu Thr Arg Phe			
190	195	200	
cat gtg acc atc ttg ctg acc ctt ttg gtt ttt ctc ctc tgc ggg ttg			796
His Val Thr Ile Leu Leu Thr Leu Leu Val Phe Leu Leu Cys Gly Leu			
205	210	215	220
ccc ttt gtc atc tac tgc atc ctg tta ttc aag att aag gat gat ttc			844
Pro Phe Val Ile Tyr Cys Ile Leu Leu Phe Lys Ile Lys Asp Asp Phe			
225	230	235	
cat gta tta gat gtt aat ttt tat cta gca tta gaa gtc ctg act gct			892
His Val Leu Asp Val Asn Phe Tyr Leu Ala Leu Glu Val Leu Thr Ala			
240	245	250	
att aac agc tgt gcc aac ccc atc atc tac ttc ttc gtg ggc tct ttc			940
Ile Asn Ser Cys Ala Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe			
255	260	265	
aga cat cag ttg aag cac cag acc ctc aaa atg gtt ctc cag agt gca			988
Arg His Gln Leu Lys His Gln Thr Leu Lys Met Val Leu Gln Ser Ala			
270	275	280	
ctg cag gac act cct gag aca gct gaa aac atg gta gag atg tca agt			1036
Leu Gln Asp Thr Pro Glu Thr Ala Glu Asn Met Val Glu Met Ser Ser			
285	290	295	300
aac aaa gca gag cct tgatgaagag cctctacctg gacctcagag gtggctttgg			1091
Asn Lys Ala Glu Pro			
305			
agtgagcact gccctgctgc acttgaccac tgtccactct tctctcagct tactgatttg			1151
acatgcctca gtggtccacc aacaacttca acatctctcc actaacttag tttttctacc			1211
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<212> PRT

<213> Mus musculus

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20	25	30	
Ile Val Phe Trp Leu Leu Gly Phe His Leu Arg Lys Asn Asp Phe Ser			
35	40	45	
Leu Tyr Ile Leu Asn Leu Ala Arg Ala Asp Phe Leu Phe Leu Leu Ser			
50	55	60	
Ser Ile Ile Ala Ser Thr Leu Phe Leu Leu Lys Val Ser Tyr Leu Ser			
65	70	75	80
Ile Ile Phe His Leu Cys Phe Asn Thr Ile Met Met Val Val Tyr Ile			
85	90	95	
Thr Gly Ile Ser Met Leu Ser Ala Ile Ser Thr Glu Cys Cys Leu Ser			

aac ttg gcc ctg gct gac ttc ctc ttc ctt ctc tgt cac atc ata aat	368
Asn Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys His Ile Ile Asn	
55 60 65	
tcc aca gtg gat ctt ctc aag ttt acc cta ccc aaa gga att ttt gcc	416
Ser Thr Val Asp Leu Leu Lys Phe Thr Leu Pro Lys Gly Ile Phe Ala	
70 75 80	
ttt tgt ttt cac act atc aaa agg gtt ctc tat atc aca ggc ctg agc	464
Phe Cys Phe His Thr Ile Lys Arg Val Leu Tyr Ile Thr Gly Leu Ser	
85 90 95 100	
atg ctc agt gcc atc agc act gag cgc tgc ctg tct gtc ctg tgc ccc	512
Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val Leu Cys Pro	
105 110 115	
atc tgg tat cac tgc cgc cgc cca gaa cac aca tca act gtc atg tgt	560
Ile Trp Tyr His Cys Arg Arg Pro Glu His Thr Ser Thr Val Met Cys	
120 125 130	
gct gtg atc tgg gtc ctg tcc ctg ttg atc tgc att ctg gat ggt tat	608
Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile Leu Asp Gly Tyr	
135 140 145	
ttc tgc ggt tac tta gat aac cat tat ttc aat tac tct gtg tgt cag	656
Phe Cys Gly Tyr Leu Asp Asn His Tyr Phe Asn Tyr Ser Val Cys Gln	
150 155 160	
gca tgg gac atc ttt atc gga gca tac ctg atg ttt ttg ttt gta gtc	704
Ala Trp Asp Ile Phe Ile Gly Ala Tyr Leu Met Phe Leu Phe Val Val	
165 170 175 180	
ctc tgt ctg tcc acc ctg gct cta ctg gcc agg ttg ttc tgt ggt gct	752
Leu Cys Leu Ser Thr Leu Ala Leu Leu Ala Arg Leu Phe Cys Gly Ala	
185 190 195	
agg aat atg aaa ttt acc aga tta ttc gtg acc atc atg ctg acc gtt	800
Arg Asn Met Lys Phe Thr Arg Leu Phe Val Thr Ile Met Leu Thr Val	
200 205 210	
ttg gtt ttt ctt ctc tgt ggg ttg ccc tgg ggc atc acc tgg ttc ctg	848
Leu Val Phe Leu Leu Cys Gly Leu Pro Trp Gly Ile Thr Trp Phe Leu	
215 220 225	
tta ttc tgg att gca cct ggt gtg ttt gta cta gat tat agc cct ctt	896
Leu Phe Trp Ile Ala Pro Gly Val Phe Val Leu Asp Tyr Ser Pro Leu	
230 235 240	
ctg gtc cta act gct att aac agc tgt gcc aac ccc att att tac ttc	944
Leu Val Leu Thr Ala Ile Asn Ser Cys Ala Asn Pro Ile Ile Tyr Phe	
245 250 255 260	
ttc gtg ggc tcc ttc agg caa cgg ttg aat aaa cag acc ctc aaa atg	992
Phe Val Gly Ser Phe Arg Gln Arg Leu Asn Lys Gln Thr Leu Lys Met	
265 270 275	
gtt ctc cag aaa gcc ctg cag gac act cct gag aca cct gaa aac atg	1040

Val Leu Gln Lys Ala Leu Gln Asp Thr Pro Glu Thr Pro Glu Asn Met
 280 285 290

gtg gag atg tca aga aac aaa gca gag ccg tgatgaagag cctctgccta 1090
 Val Glu Met Ser Arg Asn Lys Ala Glu Pro
 295 300

gacttcagag gtggatttgg agtgagcact gccctgctgc acttgaccac tgtccactct 1150
 cctctcagct tactgacttg acatgcctca ctggtccacc aacaccttcc aaagctctcc 1210
 actgacttag tatttataacc tctcccaaac aatagcatta ttcaaaaact ataatttctg 1270
 catccttctt tacattaata aaattcccat actaagtcca aa 1312

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 Ile Val Phe Trp Leu Leu Gly Phe Arg Met His Arg Thr Ala Phe Leu
 35 40 45
 Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys
 50 55 60
 His Ile Ile Asn Ser Thr Val Asp Leu Leu Lys Phe Thr Leu Pro Lys
 65 70 75 80
 Gly Ile Phe Ala Phe Cys Phe His Thr Ile Lys Arg Val Leu Tyr Ile
 85 90 95
 Thr Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser
 100 105 110
 Val Leu Cys Pro Ile Trp Tyr His Cys Arg Arg Pro Glu His Thr Ser
 115 120 125
 Thr Val Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile
 130 135 140
 Leu Asp Gly Tyr Phe Cys Gly Tyr Leu Asp Asn His Tyr Phe Asn Tyr
 145 150 155 160
 Ser Val Cys Gln Ala Trp Asp Ile Phe Ile Gly Ala Tyr Leu Met Phe
 165 170 175
 Leu Phe Val Val Leu Cys Leu Ser Thr Leu Ala Leu Leu Ala Arg Leu
 180 185 190
 Phe Cys Gly Ala Arg Asn Met Lys Phe Thr Arg Leu Phe Val Thr Ile
 195 200 205
 Met Leu Thr Val Leu Val Phe Leu Leu Cys Gly Leu Pro Trp Gly Ile
 210 215 220
 Thr Trp Phe Leu Leu Phe Trp Ile Ala Pro Gly Val Phe Val Leu Asp
 225 230 235 240
 Tyr Ser Pro Leu Leu Val Leu Thr Ala Ile Asn Ser Cys Ala Asn Pro
 245 250 255
 Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg Gln Arg Leu Asn Lys Gln
 260 265 270
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 290 295 300

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 gtc atg tgt gct gtc atc tgg gtc ctg tcc ctg ttg atc tgc att ctg 96
 Val Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile Leu
 20 25 30
 aat agt tat ttc tgc ggt ttc tta aat acc caa tat aaa aat gaa aat 144
 Asn Ser Tyr Phe Cys Gly Phe Leu Asn Thr Gln Tyr Lys Asn Glu Asn
 35 40 45
 ggg tgt ctg gca ttg agc ttc ttt act gct gca tac ctg atg ttt ttg 192
 Gly Cys Leu Ala Leu Ser Phe Phe Thr Ala Ala Tyr Leu Met Phe Leu
 50 55 60
 ttt gtg gtc ctc tgt ctg tcc agc ctg gct ctg gtg gcc agg ttg ttc 240
 Phe Val Val Leu Cys Leu Ser Ser Leu Ala Leu Val Ala Arg Leu Phe
 65 70 75 80
 tgt ggt gct agg aat atg aaa ttt acc aga tta ttc gtg acc atc atg 288
 Cys Gly Ala Arg Asn Met Lys Phe Thr Arg Leu Phe Val Thr Ile Met
 85 90 95
 ctg acc gtt ttg gtt ttt ctt ctc tgt ggg ttg ccc tgg ggc atc acc 336
 Leu Thr Val Leu Val Phe Leu Leu Cys Gly Leu Pro Trp Gly Ile Thr
 100 105 110
 tgg ttc ctg tta ttc tgg att gca cct ggt gtg ttt gta cta gat tat 384
 Trp Phe Leu Leu Phe Trp Ile Ala Pro Gly Val Phe Val Leu Asp Tyr
 115 120 125
 agc cct ctt ctg gtc cta act gct att aac agc tgt gcc aac ccc att 432
 Ser Pro Leu Leu Val Leu Thr Ala Ile Asn Ser Cys Ala Asn Pro Ile
 130 135 140
 att tac ttc ttc gtc ggc 450
 Ile Tyr Phe Phe Val Gly
 145 150

<210> 8
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 <212> PRT
 <213> Mus musculus

<400> 8

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Asn Ser Tyr Phe Cys Gly Phe Leu Asn Thr Gln Tyr Lys Asn Glu Asn
          35          40          45
Gly Cys Leu Ala Leu Ser Phe Phe Thr Ala Ala Tyr Leu Met Phe Leu
          50          55          60
Phe Val Val Leu Cys Leu Ser Ser Leu Ala Leu Val Ala Arg Leu Phe
65          70          75          80
Cys Gly Ala Arg Asn Met Lys Phe Thr Arg Leu Phe Val Thr Ile Met
          85          90          95
Leu Thr Val Leu Val Phe Leu Leu Cys Gly Leu Pro Trp Gly Ile Thr
          100          105          110
Trp Phe Leu Leu Phe Trp Ile Ala Pro Gly Val Phe Val Leu Asp Tyr
          115          120          125
Ser Pro Leu Leu Val Leu Thr Ala Ile Asn Ser Cys Ala Asn Pro Ile
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Ile Tyr Phe Phe Val Gly
145          150
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<211> 459

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<213> Mus musculus

<220>

<221> CDS

<222> (1)...(459)

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gtc atg tgt gct gtg atc tgg gtc cta tcc ctg ttg atc tgc att ctg 96
Val Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile Leu
          20          25          30

aat agc tat ttc tgt gct gtc tta cat acc aga tat gat aat gac aat 144
Asn Ser Tyr Phe Cys Ala Val Leu His Thr Arg Tyr Asp Asn Asp Asn
          35          40          45

gag tgt ctg gca act aac atc ttt acc gcc tcg tac atg ata ttt ttg 192
Glu Cys Leu Ala Thr Asn Ile Phe Thr Ala Ser Tyr Met Ile Phe Leu
          50          55          60

ctt gtg gtc ctc tgt ctg tcc agc ctg gct ctg ctg gcc agg ttg ttc 240
Leu Val Val Leu Cys Leu Ser Ser Leu Ala Leu Leu Ala Arg Leu Phe
          65          70          75          80

tgt ggc gct ggg cag atg aag ctt acc aga ttt cat gtg acc atc ttg 288
Cys Gly Ala Gly Gln Met Lys Leu Thr Arg Phe His Val Thr Ile Leu
          85          90          95
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ctg acc ctt ttg gtt ttt ctc ctc tgc ggg ttg ccc ttt gtc atc tac 336
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 100 105 110

tgc atc ctg tta ttc aag att aag gat gat ttc cat gta tta gat gtt 384
 Cys Ile Leu Leu Phe Lys Ile Lys Asp Asp Phe His Val Leu Asp Val
 115 120 125

aat ctt tat cta gca tta gaa gtc ctg act gct att aac agc tgt gcc 432
 Asn Leu Tyr Leu Ala Leu Glu Val Leu Thr Ala Ile Asn Ser Cys Ala
 130 135 140

aac ccc atc atc tac ttc ttc gtc gga 459
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 145 150

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 Asn Ser Tyr Phe Cys Ala Val Leu His Thr Arg Tyr Asp Asn Asp Asn
 35 40 45
 Glu Cys Leu Ala Thr Asn Ile Phe Thr Ala Ser Tyr Met Ile Phe Leu
 50 55 60
 Leu Val Val Leu Cys Leu Ser Ser Leu Ala Leu Leu Ala Arg Leu Phe
 65 70 75 80
 Cys Gly Ala Gly Gln Met Lys Leu Thr Arg Phe His Val Thr Ile Leu
 85 90 95
 Leu Thr Leu Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Val Ile Tyr
 100 105 110
 Cys Ile Leu Leu Phe Lys Ile Lys Asp Asp Phe His Val Leu Asp Val
 115 120 125
 Asn Leu Tyr Leu Ala Leu Glu Val Leu Thr Ala Ile Asn Ser Cys Ala
 130 135 140
 Asn Pro Ile Ile Tyr Phe Phe Val Gly
 145 150

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<220>
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gctaagccca taatgggaag taaaagattt gcttgggtcc cactttcttc cttttctatt 180
ccgtttggac catagtggct agtgtctctt acaagatcac aagaaggagg ctctgcattt 240
atctctgagt gctgtctgc atcctccttt ggcctggagg tcctctatga aatcctgaag 300
taagaaagaa atgttccaga ctctgatttt tcttcctaga ccaatgctat tcccttccat 360
gttgccaaca acttctcatc actctttctg tactttcttt tagctgggtg gtttcttaat 420
ctacagtatt gactgtcatg tcaaagttgg gtattttttg gcttttagata tttcttctct 480
ggcttttctc ccatccacac ataatacaaaa cactgagggtg atgacactaa gggactgctc 540
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15

20

25

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85

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 Arg Ser Lys Ala Glu Pro
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<213> Mus musculus

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Ile Leu Phe Trp Leu Leu Gly Phe His Leu His Arg Asn Ala Phe Leu
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Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys
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His Ile Ile Asn Ser Thr Met Leu Leu Leu Lys Val His Leu Pro Asn
65 70 75 80
Asn Ile Leu Asn His Cys Phe Asp Ile Ile Met Thr Val Leu Tyr Ile
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Thr Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser
100 105 110
Val Leu Cys Pro Ile Trp Tyr Arg Cys Arg Arg Pro Glu His Thr Ser
115 120 125
Thr Val Leu Cys Ala Val Ile Trp Phe Leu Pro Leu Leu Ile Cys Ile
130 135 140
Leu Asn Gly Tyr Phe Cys His Phe Phe Gly Pro Lys Tyr Val Ile Asp
145 150 155 160
Ser Val Cys Leu Ala Thr Asn Phe Phe Ile Arg Thr Tyr Pro Met Phe
165 170 175
Leu Phe Ile Val Leu Cys Leu Ser Thr Leu Ala Leu Leu Ala Arg Leu
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Phe Cys Gly Gly Lys Thr Lys Phe Thr Arg Leu Phe Val Thr Ile
195 200 205
Met Leu Thr Val Leu Val Phe Leu Leu Cys Gly Leu Pro Leu Gly Phe
210 215 220
Phe Trp Phe Leu Val Pro Trp Ile Asn Arg Asp Phe Ser Val Leu Asp
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245 250 255
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Val Ala Ile Thr Cys Val Ala Tyr Ile Leu Glu Glu Lys His Lys Val
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Val Gln Val Leu Arg Met Ile Gly Pro Ala Phe Leu Ser Leu Gly Leu
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Met Met Leu Val Cys Gly Leu Val Trp Val Pro Ile Ile Lys Lys Lys
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Gln Lys Gln Arg Gln Lys Ser Asn Phe Phe Gln Ser Leu Lys Phe Phe
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Leu Leu Asn Arg
135

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<212> PRT

<213> Mus musculus

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Ser Arg Ser Glu Ser Val Trp Thr Thr Thr Pro Lys Ser Asn Trp Glu
 35          40          45
Ile Tyr His Lys Pro Ile Ile Ile Met Ser Val Gly Ala Ala Ile Leu
 50          55          60
Leu Phe Gly Val Ala Ile Thr Cys Val Ala Tyr Ile Leu Glu Glu Lys
 65          70          75          80
His Lys Val Val Gln Val Leu Arg Met Ile Gly Pro Ala Phe Leu Ser
 85          90          95
Leu Gly Leu Met Met Leu Val Cys Gly Leu Val Trp Val Pro Ile Ile
100          105          110
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Lys Phe Phe Leu Leu Asn Arg
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Gln Thr Leu Ser Leu Thr Val Leu Thr Cys Ile Val Ser Leu Val Gly
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Arg Asn Ala Phe Ser Ile Tyr Ile Leu Asn Leu Ala Ala Ala Asp Phe
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Leu Phe Leu Ser Gly Arg Leu Ile Tyr Ser Leu Leu Ser Phe Ile Ser
75 80 85

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Ile Pro His Thr Ile Ser Lys Ile Leu Tyr Pro Val Met Met Phe Ser
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Tyr Phe Ala Gly Leu Ser Phe Leu Ser Ala Val Ser Thr Glu Arg Cys
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Leu Ser Ala Val Val Cys Val Leu Leu Trp Ala Leu Ser Leu Leu Arg
140 145 150

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155

160

165

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 205 210 215

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 270 275 280

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 300 305 310

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 315 320

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<211> 322
 <212> PRT
 <213> Homo sapiens

<400> 16

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225					230					235					240
Trp	Ile	His	Val	Asp	Arg	Glu	Val	Leu	Phe	Cys	His	Val	His	Leu	Val
			245						250					255	
Ser	Ile	Phe	Leu	Ser	Ala	Leu	Asn	Ser	Ser	Ala	Asn	Pro	Ile	Ile	Tyr
			260					265					270		
Phe	Phe	Val	Gly	Ser	Phe	Arg	Gln	Arg	Gln	Asn	Arg	Gln	Asn	Leu	Lys
		275					280					285			
Leu	Val	Leu	Gln	Arg	Ala	Leu	Gln	Asp	Ala	Ser	Glu	Val	Asp	Glu	Gly
	290					295					300				
Gly	Gly	Gln	Leu	Pro	Glu	Glu	Ile	Leu	Glu	Leu	Ser	Gly	Ser	Arg	Leu
305					310					315					320
Glu	Gln														

<210> 17
 <211> 1300
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (171)...(1160)

<400> 17

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caggggcggt aattaccaca taacaggctg gtcattgaaaa tcagtgaaca tgcagcaggt 120
gctcaagtct tgtttttgtt tccaggggca ccagtggagg ttttctgagc atg gat 176

Met Asp

1

cca acc acc ccg gcc tgg gga aca gaa agt aca aca gtg aat gga aat 224
Pro Thr Thr Pro Ala Trp Gly Thr Glu Ser Thr Thr Val Asn Gly Asn
5 10 15

gac caa gcc ctt ctt ctg ctt tgt ggc aag gag acc ctg atc ccg gtc 272
Asp Gln Ala Leu Leu Leu Leu Cys Gly Lys Glu Thr Leu Ile Pro Val
20 25 30

ttc ctg atc ctt ttc att gcc ctg gtc ggg ctg gta gga aac ggg ttt 320
Phe Leu Ile Leu Phe Ile Ala Leu Val Gly Leu Val Gly Asn Gly Phe
35 40 45 50

gtg ctc tgg ctc ctg ggc ttc cgc atg cgc agg aac gcc ttc tct gtc 368
Val Leu Trp Leu Leu Gly Phe Arg Met Arg Arg Asn Ala Phe Ser Val
55 60 65

tac gtc ctc agc ctg gcc ggg gcc gac ttc ctc ttc ctc tgc ttc cag 416
Tyr Val Leu Ser Leu Ala Gly Ala Asp Phe Leu Phe Leu Cys Phe Gln
70 75 80

att ata aat tgc ctg gtg tac ctc agt aac ttc ttc tgt tcc atc tcc 464
Ile Ile Asn Cys Leu Val Tyr Leu Ser Asn Phe Phe Cys Ser Ile Ser
85 90 95

atc aat ttc cct agc ttc ttc acc act gtg atg acc tgt gcc tac ctt 512
Ile Asn Phe Pro Ser Phe Phe Thr Thr Val Met Thr Cys Ala Tyr Leu
100 105 110

gca ggc ctg agc atg ctg agc acc gtc agc acc gag cgc tgc ctg tcc 560
Ala Gly Leu Ser Met Leu Ser Thr Val Ser Thr Glu Arg Cys Leu Ser
115 120 125 130

gtc ctg tgg ccc atc tgg tat cgc tgc cgc cgc ccc aga cac ctg tca 608
Val Leu Trp Pro Ile Trp Tyr Arg Cys Arg Arg Pro Arg His Leu Ser
135 140 145

gcg gtc gtg tgt gtc ctg ctc tgg gcc ctg tcc cta ctg ctg agc atc 656
Ala Val Val Cys Val Leu Leu Trp Ala Leu Ser Leu Leu Leu Ser Ile
150 155 160

ttg gaa ggg aag ttc tgt ggc ttc tta ttt agt gat ggt gac tct ggt 704
Leu Glu Gly Lys Phe Cys Gly Phe Leu Phe Ser Asp Gly Asp Ser Gly
165 170 175

tgg tgt cag aca ttt gat ttc atc act gca gcg tgg ctg att ttt tta 752
Trp Cys Gln Thr Phe Asp Phe Ile Thr Ala Ala Trp Leu Ile Phe Leu
180 185 190

ttc atg gtt ctc tgt ggg tcc agt ctg gcc ctg ctg gtc agg atc ctc 800

Phe Met Val Leu Cys Gly Ser Ser Leu Ala Leu Leu Val Arg Ile Leu
195 200 205 210

tgt ggc tcc agg ggt ctg cca ctg acc agg ctg tac ctg acc atc ctg 848
Cys Gly Ser Arg Gly Leu Pro Leu Thr Arg Leu Tyr Leu Thr Ile Leu
215 220 225

ctc aca gtg ctg gtg ttc ctc ctc tgc ggc ctg ccc ttt ggc att cag 896
Leu Thr Val Leu Val Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile Gln
230 235 240

tgg ttc cta ata tta tgg atc tgg aag gat tct gat gtc tta ttt tgt 944
Trp Phe Leu Ile Leu Trp Ile Trp Lys Asp Ser Asp Val Leu Phe Cys
245 250 255

cat att cat cca gtt tca gtt gtc ctg tca tct ctt aac agc agt gcc 992
His Ile His Pro Val Ser Val Val Leu Ser Ser Leu Asn Ser Ser Ala
260 265 270

aac ccc atc att tac ttc ttc gtg ggc tct ttt agg aag cag tgg cgg 1040
Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg Lys Gln Trp Arg
275 280 285 290

ctg cag cag ccg atc ctc aag ctg gct ctc cag agg gct ctg cag gac 1088
Leu Gln Gln Pro Ile Leu Lys Leu Ala Leu Gln Arg Ala Leu Gln Asp
295 300 305

att gct gag gtg gat cac agt gaa gga tgc ttc cgt cag ggc acc ccg 1136
Ile Ala Glu Val Asp His Ser Glu Gly Cys Phe Arg Gln Gly Thr Pro
310 315 320

gag atg tcg aga agc agt ctg gtg tagagatgga cagcctctac ttccatcaga 1190
Glu Met Ser Arg Ser Ser Leu Val
325 330

tatatgtggc tttgagaggc aactttgccc ctgtctgtct gatttgctga actttctcag 1250
tcctgatttt aaaacagtta agagagtcct tgtgaggatt aagtgagaca 1300

<210> 18
<211> 330
<212> PRT
<213> Homo sapiens

<400> 18
Met Asp Pro Thr Thr Pro Ala Trp Gly Thr Glu Ser Thr Thr Val Asn
1 5 10 15
Gly Asn Asp Gln Ala Leu Leu Leu Leu Cys Gly Lys Glu Thr Leu Ile
20 25 30
Pro Val Phe Leu Ile Leu Phe Ile Ala Leu Val Gly Leu Val Gly Asn
35 40 45
Gly Phe Val Leu Trp Leu Leu Gly Phe Arg Met Arg Arg Asn Ala Phe
50 55 60
Ser Val Tyr Val Leu Ser Leu Ala Gly Ala Asp Phe Leu Phe Leu Cys
65 70 75 80
Phe Gln Ile Ile Asn Cys Leu Val Tyr Leu Ser Asn Phe Phe Cys Ser
85 90 95
Ile Ser Ile Asn Phe Pro Ser Phe Phe Thr Thr Val Met Thr Cys Ala

<210> 20
<211> 970
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (83)...(943)

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ctggattctg acccgaaact ag atg atc atc ata ttc aga ctg gtt ggg atg 112
Met Ile Ile Ile Phe Arg Leu Val Gly Met
1 5 10

aca gga aat gcc att gtg ttc tgg ctc ctg ggc ttc agc ttg cac agg 160
Thr Gly Asn Ala Ile Val Phe Trp Leu Leu Gly Phe Ser Leu His Arg
15 20 25

aat gcc ttc tca gtc tac att tta aac ttg gcc ctt gct gac ttc gtc 208
Asn Ala Phe Ser Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Val
30 35 40

ttc ctc ctc tgt cac atc ata gat tcc atg ctg ctt ctt ctc act gtt 256
Phe Leu Leu Cys His Ile Ile Asp Ser Met Leu Leu Leu Leu Thr Val
45 50 55

ttc tac ccc aac aat atc ttt tct ggg tac ttt tac acc atc atg acg 304
Phe Tyr Pro Asn Asn Ile Phe Ser Gly Tyr Phe Tyr Thr Ile Met Thr
60 65 70

gtt ccc tac atc gca ggc ctg agc atg ctc agt gcc atc agc act gag 352
Val Pro Tyr Ile Ala Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu
75 80 85 90

ctc tgc ctg tct gtc ctg tgc ccc atc tgg tat cgc tgc cac cac cca 400
Leu Cys Leu Ser Val Leu Cys Pro Ile Trp Tyr Arg Cys His His Pro
95 100 105

gaa cac aca tca act gtc atg tgt gct gcg ata tgg gtc ctg ccc ctg 448
Glu His Thr Ser Thr Val Met Cys Ala Ala Ile Trp Val Leu Pro Leu
110 115 120

ttg gtc tgc att ctg aat agg tat ttc tgc agt ttc tta gat atc aat 496
Leu Val Cys Ile Leu Asn Arg Tyr Phe Cys Ser Phe Leu Asp Ile Asn
125 130 135

tat aac aat gac aaa cag tgt ctg gca tca aac ttc ttt act aga gca 544
Tyr Asn Asn Asp Lys Gln Cys Leu Ala Ser Asn Phe Phe Thr Arg Ala
140 145 150

tac ctg atg ttt ttg ttt gtg gtc ctt tgt ctg tcc agc atg gct ctg 592
Tyr Leu Met Phe Leu Phe Val Val Leu Cys Leu Ser Ser Met Ala Leu
155 160 165 170

ctg gcc agg ttg ttc tgt ggc act ggg cag atg aag ctt acc aga ttg 640
Leu Ala Arg Leu Phe Cys Gly Thr Gly Gln Met Lys Leu Thr Arg Leu

175										180					185					
tac	gtg	acc	atc	atg	ctg	act	ggt	ttg	ggt	ttt	ctc	ctc	tgt	ggg	ttg	688				
Tyr	Val	Thr	Ile	Met	Leu	Thr	Val	Leu	Gly	Phe	Leu	Leu	Cys	Gly	Leu					
			190					195					200							
ccc	ttt	gtc	atc	tac	tac	ttc	ctg	tta	ttc	aat	att	aag	gat	ggt	ttt	736				
Pro	Phe	Val	Ile	Tyr	Tyr	Phe	Leu	Leu	Phe	Asn	Ile	Lys	Asp	Gly	Phe					
		205					210					215								
tgt	tta	ttt	gat	ttt	aga	ttt	tat	atg	tca	aca	cat	gtc	ctg	act	gct	784				
Cys	Leu	Phe	Asp	Phe	Arg	Phe	Tyr	Met	Ser	Thr	His	Val	Leu	Thr	Ala					
	220					225					230									
att	aac	aac	tgt	gcc	aac	ccc	ata	att	tac	ttt	ttc	gag	ggc	tcc	ttc	832				
Ile	Asn	Asn	Cys	Ala	Asn	Pro	Ile	Ile	Tyr	Phe	Phe	Glu	Gly	Ser	Phe					
235					240					245					250					
agg	cat	cag	ttg	aag	cac	cag	acc	ctc	aaa	atg	ggt	ctc	cag	agt	gta	880				
Arg	His	Gln	Leu	Lys	His	Gln	Thr	Leu	Lys	Met	Val	Leu	Gln	Ser	Val					
			255						260					265						
ctg	cag	gac	act	cct	gag	ata	gct	gaa	aat	atg	gtg	gag	atg	tca	aga	928				
Leu	Gln	Asp	Thr	Pro	Glu	Ile	Ala	Glu	Asn	Met	Val	Glu	Met	Ser	Arg					
			270					275					280							
aac	ata	cca	aag	cca	tgatgaaaag cctttgcctg gacctca											970				
Asn	Ile	Pro	Lys	Pro																
			285																	

<210> 21
 <211> 287
 <212> PRT
 <213> Mus musculus

<400> 21

Met	Ile	Ile	Ile	Phe	Arg	Leu	Val	Gly	Met	Thr	Gly	Asn	Ala	Ile	Val
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Phe	Trp	Leu	Leu	Gly	Phe	Ser	Leu	His	Arg	Asn	Ala	Phe	Ser	Val	Tyr
		20						25				30			
Ile	Leu	Asn	Leu	Ala	Leu	Ala	Asp	Phe	Val	Phe	Leu	Leu	Cys	His	Ile
		35					40				45				
Ile	Asp	Ser	Met	Leu	Leu	Leu	Leu	Thr	Val	Phe	Tyr	Pro	Asn	Asn	Ile
	50					55					60				
Phe	Ser	Gly	Tyr	Phe	Tyr	Thr	Ile	Met	Thr	Val	Pro	Tyr	Ile	Ala	Gly
65					70					75				80	
Leu	Ser	Met	Leu	Ser	Ala	Ile	Ser	Thr	Glu	Leu	Cys	Leu	Ser	Val	Leu
				85					90					95	
Cys	Pro	Ile	Trp	Tyr	Arg	Cys	His	His	Pro	Glu	His	Thr	Ser	Thr	Val
			100					105					110		
Met	Cys	Ala	Ala	Ile	Trp	Val	Leu	Pro	Leu	Leu	Val	Cys	Ile	Leu	Asn
		115					120					125			
Arg	Tyr	Phe	Cys	Ser	Phe	Leu	Asp	Ile	Asn	Tyr	Asn	Asn	Asp	Lys	Gln
	130					135					140				
Cys	Leu	Ala	Ser	Asn	Phe	Phe	Thr	Arg	Ala	Tyr	Leu	Met	Phe	Leu	Phe
145					150					155					160

Val	Val	Leu	Cys	Leu	Ser	Ser	Met	Ala	Leu	Leu	Ala	Arg	Leu	Phe	Cys
				165					170					175	
Gly	Thr	Gly	Gln	Met	Lys	Leu	Thr	Arg	Leu	Tyr	Val	Thr	Ile	Met	Leu
			180					185					190		
Thr	Val	Leu	Gly	Phe	Leu	Leu	Cys	Gly	Leu	Pro	Phe	Val	Ile	Tyr	Tyr
		195					200					205			
Phe	Leu	Leu	Phe	Asn	Ile	Lys	Asp	Gly	Phe	Cys	Leu	Phe	Asp	Phe	Arg
	210					215					220				
Phe	Tyr	Met	Ser	Thr	His	Val	Leu	Thr	Ala	Ile	Asn	Asn	Cys	Ala	Asn
225					230					235					240
Pro	Ile	Ile	Tyr	Phe	Phe	Glu	Gly	Ser	Phe	Arg	His	Gln	Leu	Lys	His
				245					250					255	
Gln	Thr	Leu	Lys	Met	Val	Leu	Gln	Ser	Val	Leu	Gln	Asp	Thr	Pro	Glu
			260				265						270		
Ile	Ala	Glu	Asn	Met	Val	Glu	Met	Ser	Arg	Asn	Ile	Pro	Lys	Pro	
		275					280					285			

<210> 22
 <211> 1024
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (16)...(918)

<400> 22
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 Met His Arg Ser Ile Ser Ile Arg Ile Leu Ile Thr
 1 5 10

aac ttg atg atc gtc atc ctc gga cta gtc ggg ctg aca gga aac gcc 99
 Asn Leu Met Ile Val Ile Leu Gly Leu Val Gly Leu Thr Gly Asn Ala
 15 20 25

att gtg ttc tgg ctc ctg ctc ttc cgc ttg cgc agg aac gcc ttc tca 147
 Ile Val Phe Trp Leu Leu Leu Phe Arg Leu Arg Arg Asn Ala Phe Ser
 30 35 40

atc tac atc cta aac ttg gcc ctg gct gac ttc ctc ttc ctc ctc tgc 195
 Ile Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys
 45 50 55 60

cac atc ata gct tcc aca gag cat att ctc acg ttt tcc tcc ccc aac 243
 His Ile Ile Ala Ser Thr Glu His Ile Leu Thr Phe Ser Ser Pro Asn
 65 70 75

agt atc ttt atc aat tgc ctt tac acc ttc agg gtg ctt ctc tac atc 291
 Ser Ile Phe Ile Asn Cys Leu Tyr Thr Phe Arg Val Leu Leu Tyr Ile
 80 85 90

gca ggc ctg agc atg ctc agt gcc atc agc att gag cgc tgc ctg tct 339
 Ala Gly Leu Ser Met Leu Ser Ala Ile Ser Ile Glu Arg Cys Leu Ser
 95 100 105

gtc atg tgc ccc atc tgg tat cgc tgc cac agc cca gaa cac aca tca 387

Val	Met	Cys	Pro	Ile	Trp	Tyr	Arg	Cys	His	Ser	Pro	Glu	His	Thr	Ser	
110						115					120					
act	gtc	atg	tgt	gct	atg	atc	tgg	gtc	ctg	tct	cta	ttg	ctc	tgc	att	435
Thr	Val	Met	Cys	Ala	Met	Ile	Trp	Val	Leu	Ser	Leu	Leu	Leu	Cys	Ile	
125					130				135						140	
ctg	tat	agg	tat	ttc	tgc	ggc	ttc	ttg	gat	acc	aaa	tat	gaa	gat	gac	483
Leu	Tyr	Arg	Tyr	Phe	Cys	Gly	Phe	Leu	Asp	Thr	Lys	Tyr	Glu	Asp	Asp	
				145				150						155		
tat	ggg	tgt	cta	gca	atg	aac	ttc	ctt	act	acc	gca	tac	ctg	atg	ttt	531
Tyr	Gly	Cys	Leu	Ala	Met	Asn	Phe	Leu	Thr	Thr	Ala	Tyr	Leu	Met	Phe	
			160					165						170		
ttg	ttt	gta	gtc	ctc	tgt	gtg	tcc	agc	ctg	gct	ctg	ctg	gcc	agg	ttg	579
Leu	Phe	Val	Val	Leu	Cys	Val	Ser	Ser	Leu	Ala	Leu	Leu	Ala	Arg	Leu	
		175					180						185			
ttc	tgt	ggc	gct	gga	cgg	atg	aag	ctt	acc	aga	tta	tac	gtg	acc	atc	627
Phe	Cys	Gly	Ala	Gly	Arg	Met	Lys	Leu	Thr	Arg	Leu	Tyr	Val	Thr	Ile	
	190					195					200					
acg	ctg	acc	ctt	ttg	gtt	ttt	ctc	ctc	tgc	ggg	ttg	ccc	tgt	ggc	ttc	675
Thr	Leu	Thr	Leu	Leu	Val	Phe	Leu	Leu	Cys	Gly	Leu	Pro	Cys	Gly	Phe	
205					210				215						220	
tac	tgg	ttc	ctg	tta	tcc	aaa	att	aag	aat	gtt	ttt	act	gta	ttt	gaa	723
Tyr	Trp	Phe	Leu	Leu	Ser	Lys	Ile	Lys	Asn	Val	Phe	Thr	Val	Phe	Glu	
				225				230						235		
ttt	agt	ctt	tat	ctg	gca	tca	gtt	gtc	ctg	act	gct	att	aac	agc	tgt	771
Phe	Ser	Leu	Tyr	Leu	Ala	Ser	Val	Val	Leu	Thr	Ala	Ile	Asn	Ser	Cys	
			240					245					250			
gcc	aac	ccc	atc	att	tac	ttc	ttt	gtg	ggc	tca	ttc	agg	cat	cgg	ttg	819
Ala	Asn	Pro	Ile	Ile	Tyr	Phe	Phe	Val	Gly	Ser	Phe	Arg	His	Arg	Leu	
		255					260					265				
aag	cac	cag	acc	ctc	aaa	atg	gtt	ctc	cag	agt	gca	ctg	cag	gac	act	867
Lys	His	Gln	Thr	Leu	Lys	Met	Val	Leu	Gln	Ser	Ala	Leu	Gln	Asp	Thr	
	270					275					280					
cct	gag	aca	cct	gaa	aac	atg	gtg	gag	atg	tca	aga	aac	aaa	gca	gag	915
Pro	Glu	Thr	Pro	Glu	Asn	Met	Val	Glu	Met	Ser	Arg	Asn	Lys	Ala	Glu	
285					290					295					300	
ctg	tgatgaagag	cctctgccccg	gacctcagag	gtggcttttg	agtgagcact											968
Leu																

gccctgctgc	acttggccac	tgtccactct	cctctcagct	tactcacttg	gcatgc	1024
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<210> 23
 <211> 301
 <212> PRT
 <213> Mus musculus

<400> 23

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Val	Ile	Leu	Gly	Leu	Val	Gly	Leu	Thr	Gly	Asn	Ala	Ile	Val	Phe	Trp
			20					25					30		
Leu	Leu	Leu	Phe	Arg	Leu	Arg	Arg	Asn	Ala	Phe	Ser	Ile	Tyr	Ile	Leu
		35					40					45			
Asn	Leu	Ala	Leu	Ala	Asp	Phe	Leu	Phe	Leu	Leu	Cys	His	Ile	Ile	Ala
	50					55					60				
Ser	Thr	Glu	His	Ile	Leu	Thr	Phe	Ser	Ser	Pro	Asn	Ser	Ile	Phe	Ile
	65				70					75					80
Asn	Cys	Leu	Tyr	Thr	Phe	Arg	Val	Leu	Leu	Tyr	Ile	Ala	Gly	Leu	Ser
				85					90					95	
Met	Leu	Ser	Ala	Ile	Ser	Ile	Glu	Arg	Cys	Leu	Ser	Val	Met	Cys	Pro
			100					105					110		
Ile	Trp	Tyr	Arg	Cys	His	Ser	Pro	Glu	His	Thr	Ser	Thr	Val	Met	Cys
	115						120					125			
Ala	Met	Ile	Trp	Val	Leu	Ser	Leu	Leu	Leu	Cys	Ile	Leu	Tyr	Arg	Tyr
	130						135					140			
Phe	Cys	Gly	Phe	Leu	Asp	Thr	Lys	Tyr	Glu	Asp	Asp	Tyr	Gly	Cys	Leu
	145					150				155					160
Ala	Met	Asn	Phe	Leu	Thr	Thr	Ala	Tyr	Leu	Met	Phe	Leu	Phe	Val	Val
				165					170					175	
Leu	Cys	Val	Ser	Ser	Leu	Ala	Leu	Leu	Ala	Arg	Leu	Phe	Cys	Gly	Ala
			180						185				190		
Gly	Arg	Met	Lys	Leu	Thr	Arg	Leu	Tyr	Val	Thr	Ile	Thr	Leu	Thr	Leu
	195						200					205			
Leu	Val	Phe	Leu	Leu	Cys	Gly	Leu	Pro	Cys	Gly	Phe	Tyr	Trp	Phe	Leu
	210					215					220				
Leu	Ser	Lys	Ile	Lys	Asn	Val	Phe	Thr	Val	Phe	Glu	Phe	Ser	Leu	Tyr
	225				230					235					240
Leu	Ala	Ser	Val	Val	Leu	Thr	Ala	Ile	Asn	Ser	Cys	Ala	Asn	Pro	Ile
				245					250					255	
Ile	Tyr	Phe	Phe	Val	Gly	Ser	Phe	Arg	His	Arg	Leu	Lys	His	Gln	Thr
			260					265					270		
Leu	Lys	Met	Val	Leu	Gln	Ser	Ala	Leu	Gln	Asp	Thr	Pro	Glu	Thr	Pro
		275					280					285			
Glu	Asn	Met	Val	Glu	Met	Ser	Arg	Asn	Lys	Ala	Glu	Leu			
	290					295					300				

<210> 24

<211> 1045

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (106)...(1020)

<400> 24

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ctaaacacct cagcctcagc aatgtcaccc acgacaacaa gtcca atg gac gaa acc 117
Met Asp Glu Thr

agc cct aga agt att gac atc gag tca ctg atc cca aac ttg atg atc	165
Ser Pro Arg Ser Ile Asp Ile Glu Ser Leu Ile Pro Asn Leu Met Ile	
5 10 15 20	
atc atc ttt gga ctg gtt ggg ctg aca gga aat gcc att gtg ctc tgg	213
Ile Ile Phe Gly Leu Val Gly Leu Thr Gly Asn Ala Ile Val Leu Trp	
25 30 35	
ctc ctg ggc ttc tgc ttg cac agg aat gcc ttc tta gtc tac atc cta	261
Leu Leu Gly Phe Cys Leu His Arg Asn Ala Phe Leu Val Tyr Ile Leu	
40 45 50	
aac ttg gcc ctg gct gac ttc ctc ttc ctt ctc tgt cac ttc ata aat	309
Asn Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys His Phe Ile Asn	
55 60 65	
tca gca atg ttt ctt ctc aag gtt cct ata ccc aac ggt atc ttt gtc	357
Ser Ala Met Phe Leu Leu Lys Val Pro Ile Pro Asn Gly Ile Phe Val	
70 75 80	
tat tgc ttt tac acc atc aaa atg gtt ctc tac atc aca ggc ctg agc	405
Tyr Cys Phe Tyr Thr Ile Lys Met Val Leu Tyr Ile Thr Gly Leu Ser	
85 90 95 100	
atg ctc agt gcc atc agc act gag cgc tgc ctt tct gtc ctg tgc ccc	453
Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val Leu Cys Pro	
105 110 115	
atc tgg tat cac tgc cgc cgc cca gaa cac aca tca act gtc atg tgt	501
Ile Trp Tyr His Cys Arg Arg Pro Glu His Thr Ser Thr Val Met Cys	
120 125 130	
gct gtg att tgg atc ttt tcc gtg ttg atc tgc att ctg aaa gaa tat	549
Ala Val Ile Trp Ile Phe Ser Val Leu Ile Cys Ile Leu Lys Glu Tyr	
135 140 145	
ttc tgt gat ttc ttt ggt acc aaa ttg gga aat tac tat gtg tgt cag	597
Phe Cys Asp Phe Phe Gly Thr Lys Leu Gly Asn Tyr Tyr Val Cys Gln	
150 155 160	
gca tcc aac ttc ttt atg gga gca tac cta atg ttt ttg ttt gta gtc	645
Ala Ser Asn Phe Phe Met Gly Ala Tyr Leu Met Phe Leu Phe Val Val	
165 170 175 180	
ctc tgt ctg tcc acc ctg gct ctg ctg gcc agg ttg ttc tgt ggt gct	693
Leu Cys Leu Ser Thr Leu Ala Leu Leu Ala Arg Leu Phe Cys Gly Ala	
185 190 195	
gag aag atg aaa ttt acc aga tta ttc gtg acc atc atg ctg acc att	741
Glu Lys Met Lys Phe Thr Arg Leu Phe Val Thr Ile Met Leu Thr Ile	
200 205 210	
ttg gtt ttt ctc ctc tgt ggg ttg cca tgg ggc ttc ttc tgg ttc ctg	789
Leu Val Phe Leu Leu Cys Gly Leu Pro Trp Gly Phe Phe Trp Phe Leu	
215 220 225	
tta atc tgg att aag ggt ggt ttt agt gta cta gat tat aga ctt tat	837

Leu Ile Trp Ile Lys Gly Gly Phe Ser Val Leu Asp Tyr Arg Leu Tyr
 230 235 240

ttg gca tca att gtc cta act gtt gtt aac agc tgt gcc aac ccc atc 885
 Leu Ala Ser Ile Val Leu Thr Val Val Asn Ser Cys Ala Asn Pro Ile
 245 250 255 260

att tac ttc ttc gtg gga tca ttc agg cat cgg ttg aag cac cag acc 933
 Ile Tyr Phe Phe Val Gly Ser Phe Arg His Arg Leu Lys His Gln Thr
 265 270 275

ctc aaa atg gtt ctc cag agt gca ctg cag gac act cct gag aca cat 981
 Leu Lys Met Val Leu Gln Ser Ala Leu Gln Asp Thr Pro Glu Thr His
 280 285 290

gaa aac atg gtg gag atg tca aga atc aaa gca gag cag tgatgaagag 1030
 Glu Asn Met Val Glu Met Ser Arg Ile Lys Ala Glu Gln
 295 300 305

cctctgacctg gacct 1045

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 35 40 45
 Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys
 50 55 60
 His Phe Ile Asn Ser Ala Met Phe Leu Leu Lys Val Pro Ile Pro Asn
 65 70 75 80
 Gly Ile Phe Val Tyr Cys Phe Tyr Thr Ile Lys Met Val Leu Tyr Ile
 85 90 95
 Thr Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser
 100 105 110
 Val Leu Cys Pro Ile Trp Tyr His Cys Arg Arg Pro Glu His Thr Ser
 115 120 125
 Thr Val Met Cys Ala Val Ile Trp Ile Phe Ser Val Leu Ile Cys Ile
 130 135 140
 Leu Lys Glu Tyr Phe Cys Asp Phe Phe Gly Thr Lys Leu Gly Asn Tyr
 145 150 155 160
 Tyr Val Cys Gln Ala Ser Asn Phe Phe Met Gly Ala Tyr Leu Met Phe
 165 170 175
 Leu Phe Val Val Leu Cys Leu Ser Thr Leu Ala Leu Leu Ala Arg Leu
 180 185 190
 Phe Cys Gly Ala Glu Lys Met Lys Phe Thr Arg Leu Phe Val Thr Ile
 195 200 205
 Met Leu Thr Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Trp Gly Phe
 210 215 220
 Phe Trp Phe Leu Leu Ile Trp Ile Lys Gly Gly Phe Ser Val Leu Asp
 225 230 235 240

Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
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<222> (45) ... (959)
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Ile	Leu	Gly	Ser	Ile	Asp	Ile	Glu	Thr	Leu	Ile	Arg	His	Leu	Met	Ile	
5					10					15					20	
atc	atc	ttc	gga	ctg	gtc	ggg	ctg	aca	gga	aat	gcc	att	gtg	ttc	tgg	152
Ile	Ile	Phe	Gly	Leu	Val	Gly	Leu	Thr	Gly	Asn	Ala	Ile	Val	Phe	Trp	
				25					30					35		
ctc	ctg	ggc	ttc	cac	ttg	cac	agg	aat	gcc	ttc	tta	gtc	tac	atc	ata	200
Leu	Leu	Gly	Phe	His	Leu	His	Arg	Asn	Ala	Phe	Leu	Val	Tyr	Ile	Ile	
			40					45					50			
aac	ttg	gcc	ctg	gct	gac	ttc	ttc	tat	ctg	ctc	tgt	cac	atc	ata	aat	248
Asn	Leu	Ala	Leu	Ala	Asp	Phe	Phe	Tyr	Leu	Leu	Cys	His	Ile	Ile	Asn	
		55					60					65				
tcc	ata	atg	ttt	ctt	ctc	aag	gtt	ccc	tca	ccc	aac	att	atc	ttg	gac	296
Ser	Ile	Met	Phe	Leu	Leu	Lys	Val	Pro	Ser	Pro	Asn	Ile	Ile	Leu	Asp	
	70					75					80					
cat	tgc	ttt	tac	acc	atc	atg	ata	gtt	ctc	tac	atc	aca	ggc	ctg	agc	344
His	Cys	Phe	Tyr	Thr	Ile	Met	Ile	Val	Leu	Tyr	Ile	Thr	Gly	Leu	Ser	
85					90					95					100	
atg	ctc	agc	gcc	atc	agc	act	gag	cgc	tgc	ctg	tct	gtc	ctg	tgc	ccc	392
Met	Leu	Ser	Ala	Ile	Ser	Thr	Glu	Arg	Cys	Leu	Ser	Val	Leu	Cys	Pro	
				105					110					115		
atc	tgg	tat	cgc	tgc	cac	cgt	cca	gaa	cac	aca	tca	act	gtc	atg	tgt	440
Ile	Trp	Tyr	Arg	Cys	His	Arg	Pro	Glu	His	Thr	Ser	Thr	Val	Met	Cys	
			120					125					130			

gct	gtg	atc	tgg	gta	atg	tcc	ctg	ttg	atc	tct	att	ctc	aat	gga	tat	488
Ala	Val	Ile	Trp	Val	Met	Ser	Leu	Leu	Ile	Ser	Ile	Leu	Asn	Gly	Tyr	
	135						140					145				

ttc	tgt	aat	ttc	tct	agt	ccc	aaa	tat	gta	aat	aac	tct	gtg	tgt	cag	536
Phe	Cys	Asn	Phe	Ser	Ser	Pro	Lys	Tyr	Val	Asn	Asn	Ser	Val	Cys	Gln	
	150					155					160					

gca	tca	cac	atc	ttt	atc	aga	aca	tac	cca	ata	ttt	ttg	ttt	gta	ctc	584
Ala	Ser	His	Ile	Phe	Ile	Arg	Thr	Tyr	Pro	Ile	Phe	Leu	Phe	Val	Leu	
	165				170					175					180	

ctc	tgt	ctg	tcc	acc	ctt	gct	ctg	ctg	gcc	agg	ttg	ttc	tct	ggt	gct	632
Leu	Cys	Leu	Ser	Thr	Leu	Ala	Leu	Leu	Ala	Arg	Leu	Phe	Ser	Gly	Ala	
				185					190					195		

ggg	aag	agg	aaa	ttt	acc	aga	tta	ttc	gtg	acc	atc	atg	ctg	gcc	att	680
Gly	Lys	Arg	Lys	Phe	Thr	Arg	Leu	Phe	Val	Thr	Ile	Met	Leu	Ala	Ile	
			200					205					210			

ttg	gtt	ttt	ctt	ctc	tgt	ggg	tta	ccc	ctg	ggc	ttc	ttc	tgg	ttt	ctg	728
Leu	Val	Phe	Leu	Leu	Cys	Gly	Leu	Pro	Leu	Gly	Phe	Phe	Trp	Phe	Leu	
		215					220					225				

tca	ccc	tgg	att	gag	gat	cgt	ttc	att	gta	cta	gat	tat	aga	ctt	ttt	776
Ser	Pro	Trp	Ile	Glu	Asp	Arg	Phe	Ile	Val	Leu	Asp	Tyr	Arg	Leu	Phe	
	230					235					240					

ttt	gca	tca	gtt	gtc	cta	act	gtt	gtt	aac	agc	tgt	gcc	aac	ccc	atc	824
Phe	Ala	Ser	Val	Val	Leu	Thr	Val	Val	Asn	Ser	Cys	Ala	Asn	Pro	Ile	
	245				250					255					260	

att	tac	ttc	ttt	gtg	ggc	tcc	ttc	agg	cat	cgg	ttg	aag	caa	cag	acc	872
Ile	Tyr	Phe	Phe	Val	Gly	Ser	Phe	Arg	His	Arg	Leu	Lys	Gln	Gln	Thr	
				265				270						275		

ctc	aaa	atg	ttt	ctc	cag	aga	gca	ctg	cag	gac	acc	cct	gag	aca	cct	920
Leu	Lys	Met	Phe	Leu	Gln	Arg	Ala	Leu	Gln	Asp	Thr	Pro	Glu	Thr	Pro	
			280					285					290			

gaa	aac	atg	gtg	gag	atg	tca	aga	agc	aaa	gca	gag	ccg	tgatgaagag			969
Glu	Asn	Met	Val	Glu	Met	Ser	Arg	Ser	Lys	Ala	Glu	Pro				
		295				300					305					

cctcttccag	g															980
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 <213> Mus musculus

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His	Leu	Met	Ile	Ile	Ile	Phe	Gly	Leu	Val	Gly	Leu	Thr	Gly	Asn	Ala	
			20					25					30			

Ile Val Phe Trp Leu Leu Gly Phe His Leu His Arg Asn Ala Phe Leu
 35 40 45
 Val Tyr Ile Ile Asn Leu Ala Leu Ala Asp Phe Phe Tyr Leu Leu Cys
 50 55 60
 His Ile Ile Asn Ser Ile Met Phe Leu Leu Lys Val Pro Ser Pro Asn
 65 70 75 80
 Ile Ile Leu Asp His Cys Phe Tyr Thr Ile Met Ile Val Leu Tyr Ile
 85 90 95
 Thr Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser
 100 105 110
 Val Leu Cys Pro Ile Trp Tyr Arg Cys His Arg Pro Glu His Thr Ser
 115 120 125
 Thr Val Met Cys Ala Val Ile Trp Val Met Ser Leu Leu Ile Ser Ile
 130 135 140
 Leu Asn Gly Tyr Phe Cys Asn Phe Ser Ser Pro Lys Tyr Val Asn Asn
 145 150 155 160
 Ser Val Cys Gln Ala Ser His Ile Phe Ile Arg Thr Tyr Pro Ile Phe
 165 170 175
 Leu Phe Val Leu Leu Cys Leu Ser Thr Leu Ala Leu Leu Ala Arg Leu
 180 185 190
 Phe Ser Gly Ala Gly Lys Arg Lys Phe Thr Arg Leu Phe Val Thr Ile
 195 200 205
 Met Leu Ala Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Leu Gly Phe
 210 215 220
 Phe Trp Phe Leu Ser Pro Trp Ile Glu Asp Arg Phe Ile Val Leu Asp
 225 230 235 240
 Tyr Arg Leu Phe Phe Ala Ser Val Val Leu Thr Val Val Asn Ser Cys
 245 250 255
 Ala Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg His Arg Leu
 260 265 270
 Lys Gln Gln Thr Leu Lys Met Phe Leu Gln Arg Ala Leu Gln Asp Thr
 275 280 285
 Pro Glu Thr Pro Glu Asn Met Val Glu Met Ser Arg Ser Lys Ala Glu
 290 295 300
 Pro
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 <213> Homo sapiens

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 Met Glu Thr Leu Pro Lys Val Leu Glu Val Asp Glu Lys Ser Pro Glu
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 gcc aag gac ctg ctg ccc agc cag acc gcc agc tcc ctg tgc atc agc 96
 Ala Lys Asp Leu Leu Pro Ser Gln Thr Ala Ser Ser Leu Cys Ile Ser
 20 25 30
 tcc agg agc gag tct gtc tgg acc acc acc ccc agg agt aac tgg gaa 144

Ser Arg Ser Glu Ser Val Trp Thr Thr Thr Pro Arg Ser Asn Trp Glu
 35 40 45

atc tac cgc aag ccc atc gtt atc atg tca gtg ggc ggt gcc atc ctg 192
 Ile Tyr Arg Lys Pro Ile Val Ile Met Ser Val Gly Gly Ala Ile Leu
 50 55 60

ctt ttc ggc gtg gtc atc acc tgc ttg gcc tac acc ttg aag ctg agt 240
 Leu Phe Gly Val Val Ile Thr Cys Leu Ala Tyr Thr Leu Lys Leu Ser
 65 70 75 80

gac aag agt ctc tcc atc ctc aaa atg gta ggg cct ggc ttc ctg tcc 288
 Asp Lys Ser Leu Ser Ile Leu Lys Met Val Gly Pro Gly Phe Leu Ser
 85 90 95

ctg gga ctc atg atg ctg gtg tgc ggg ctg gtg tgg gtg ccc atc atc 336
 Leu Gly Leu Met Met Leu Val Cys Gly Leu Val Trp Val Pro Ile Ile
 100 105 110

aaa aag aaa cag aag cac aga cag aag tcg aat ttc tta cgc agc ctc 384
 Lys Lys Lys Gln Lys His Arg Gln Lys Ser Asn Phe Leu Arg Ser Leu
 115 120 125

aag tcc ttc ttc ctg act cgc tga 408
 Lys Ser Phe Phe Leu Thr Arg
 130 135

<210> 29
 <211> 135
 <212> PRT
 <213> Homo sapiens

<400> 29
 Met Glu Thr Leu Pro Lys Val Leu Glu Val Asp Glu Lys Ser Pro Glu
 1 5 10 15
 Ala Lys Asp Leu Leu Pro Ser Gln Thr Ala Ser Ser Leu Cys Ile Ser
 20 25 30
 Ser Arg Ser Glu Ser Val Trp Thr Thr Thr Pro Arg Ser Asn Trp Glu
 35 40 45
 Ile Tyr Arg Lys Pro Ile Val Ile Met Ser Val Gly Gly Ala Ile Leu
 50 55 60
 Leu Phe Gly Val Val Ile Thr Cys Leu Ala Tyr Thr Leu Lys Leu Ser
 65 70 75 80
 Asp Lys Ser Leu Ser Ile Leu Lys Met Val Gly Pro Gly Phe Leu Ser
 85 90 95
 Leu Gly Leu Met Met Leu Val Cys Gly Leu Val Trp Val Pro Ile Ile
 100 105 110
 Lys Lys Lys Gln Lys His Arg Gln Lys Ser Asn Phe Leu Arg Ser Leu
 115 120 125
 Lys Ser Phe Phe Leu Thr Arg
 130 135

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 <212> DNA

<213> Homo sapiens

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ggttcagagt cagcaagaac tggatttcaa actggatttg aggaccccca ccttttgata 180
ggtgacttat tctctgtgag tctctgatct gccctcttta aatgaggaag taaatcccac 240
atggcagggt ggtggggaga atcagagatc atacagctgg tgatcacaac tggtttctgt 300
ttccagggtc accagactgg ggtttctgag c atg gat tca acc atc cca gtc 352
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Met Asp Ser Thr Ile Pro Val

1

5

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ttg ggt aca gaa ctg aca cca atc aac gga cgt gag gag act cct tgc 400
Leu Gly Thr Glu Leu Thr Pro Ile Asn Gly Arg Glu Glu Thr Pro Cys
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10

15

20

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tac aag cag acc ctg agc ttc acg ggg ctg acg tgc atc gtt tcc ctt 448
Tyr Lys Gln Thr Leu Ser Phe Thr Gly Leu Thr Cys Ile Val Ser Leu
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25

30

35

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gtc gcg ctg aca gga aac gcg gtt gtg ctc tgg ctc ctg ggc tgc cgc 496
Val Ala Leu Thr Gly Asn Ala Val Val Leu Trp Leu Leu Gly Cys Arg
```

40

45

50

55

```
atg cgc agg aac gct gtc tcc atc tac atc ctc aac ctg gtc gcg gcc 544
Met Arg Arg Asn Ala Val Ser Ile Tyr Ile Leu Asn Leu Val Ala Ala
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60

65

70

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gac ttc ctc ttc ctt agc ggc cac att ata tgt tgc ccg tta cgc ctc 592
Asp Phe Leu Phe Leu Ser Gly His Ile Ile Cys Ser Pro Leu Arg Leu
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75

80

85

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atc aat atc cgc cat ccc atc tcc aaa atc ctc agt cct gtg atg acc 640
Ile Asn Ile Arg His Pro Ile Ser Lys Ile Leu Ser Pro Val Met Thr
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90

95

100

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ttt ccc tac ttt ata ggc cta agc atg ctg agc gcc atc agc acc gag 688
Phe Pro Tyr Phe Ile Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu
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105

110

115

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cgc tgc ctg tcc atc ctg tgg ccc atc tgg tac cac tgc cgc cgc ccc 736
Arg Cys Leu Ser Ile Leu Trp Pro Ile Trp Tyr His Cys Arg Arg Pro
```

120

125

130

135

```
aga tac ctg tca tcg gtc atg tgt gtc ctg ctc tgg gcc ctg tcc ctg 784
Arg Tyr Leu Ser Ser Val Met Cys Val Leu Leu Trp Ala Leu Ser Leu
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140

145

150

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ctg cgg agt atc ctg gag tgg atg ttc tgt gac ttc ctg ttt agt ggt 832
Leu Arg Ser Ile Leu Glu Trp Met Phe Cys Asp Phe Leu Phe Ser Gly
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155

160

165

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gct gat tct gtt tgg tgt gaa acg tca gat ttc att aca atc gcg tgg 880
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Ala Asp Ser Val Trp Cys Glu Thr Ser Asp Phe Ile Thr Ile Ala Trp
 170 175 180

ctg gtt ttt tta tgt gtg gtt ctc tgt ggg tcc agc ctg gtc ctg ctg 928
 Leu Val Phe Leu Cys Val Val Leu Cys Gly Ser Ser Leu Val Leu Leu
 185 190 195

gtc agg att ctc tgt gga tcc cgg aag atg ccg ctg acc agg ctg tac 976
 Val Arg Ile Leu Cys Gly Ser Arg Lys Met Pro Leu Thr Arg Leu Tyr
 200 205 210 215

gtg acc atc ctc ctc aca gtg ctg gtc ttc ctc ctc tgt ggc ctg ccc 1024
 Val Thr Ile Leu Leu Thr Val Leu Val Phe Leu Leu Cys Gly Leu Pro
 220 225 230

ttt ggc att cag tgg gcc ctg ttt tcc agg atc cac ctg gat tgg aaa 1072
 Phe Gly Ile Gln Trp Ala Leu Phe Ser Arg Ile His Leu Asp Trp Lys
 235 240 245

gtc tta ttt tgt cat gtg cat cta gtt tcc att ttc ctg tcc gct ctt 1120
 Val Leu Phe Cys His Val His Leu Val Ser Ile Phe Leu Ser Ala Leu
 250 255 260

aac agc agt gcc aac ccc atc att tac ttc ttc gtg ggc tcc ttt agg 1168
 Asn Ser Ser Ala Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg
 265 270 275

cag cgt caa aat agg cag aac ctg aag ctg gtt ctc cag agg gct ctg 1216
 Gln Arg Gln Asn Arg Gln Asn Leu Lys Leu Val Leu Gln Arg Ala Leu
 280 285 290 295

cag gac acg cct gag gtg gat gaa ggt gga ggg tgg ctt cct cag gaa 1264
 Gln Asp Thr Pro Glu Val Asp Glu Gly Gly Gly Trp Leu Pro Gln Glu
 300 305 310

acc ctg gag ctg tcg gga agc aga ttg gag cag tgaggaagaa cctctgccct 1317
 Thr Leu Glu Leu Ser Gly Ser Arg Leu Glu Gln
 315 320

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 cttagccttc tgcctcagaa atg 1400

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 <213> Homo sapiens

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 35 40 45
 Leu Trp Leu Leu Gly Cys Arg Met Arg Arg Asn Ala Val Ser Ile Tyr
 50 55 60
 Ile Leu Asn Leu Val Ala Ala Asp Phe Leu Phe Leu Ser Gly His Ile

65		70		75		80
Ile Cys Ser Pro Leu Arg Leu Ile Asn Ile Arg His Pro Ile Ser Lys						
	85		90		95	
Ile Leu Ser Pro Val Met Thr Phe Pro Tyr Phe Ile Gly Leu Ser Met						
	100		105		110	
Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Ile Leu Trp Pro Ile						
	115		120		125	
Trp Tyr His Cys Arg Arg Pro Arg Tyr Leu Ser Ser Val Met Cys Val						
	130		135		140	
Leu Leu Trp Ala Leu Ser Leu Leu Arg Ser Ile Leu Glu Trp Met Phe						
	145		150		155	
Cys Asp Phe Leu Phe Ser Gly Ala Asp Ser Val Trp Cys Glu Thr Ser						
	165		170		175	
Asp Phe Ile Thr Ile Ala Trp Leu Val Phe Leu Cys Val Val Leu Cys						
	180		185		190	
Gly Ser Ser Leu Val Leu Leu Val Arg Ile Leu Cys Gly Ser Arg Lys						
	195		200		205	
Met Pro Leu Thr Arg Leu Tyr Val Thr Ile Leu Leu Thr Val Leu Val						
	210		215		220	
Phe Leu Leu Cys Gly Leu Pro Phe Gly Ile Gln Trp Ala Leu Phe Ser						
	225		230		235	
Arg Ile His Leu Asp Trp Lys Val Leu Phe Cys His Val His Leu Val						
	245		250		255	
Ser Ile Phe Leu Ser Ala Leu Asn Ser Ser Ala Asn Pro Ile Ile Tyr						
	260		265		270	
Phe Phe Val Gly Ser Phe Arg Gln Arg Gln Asn Arg Gln Asn Leu Lys						
	275		280		285	
Leu Val Leu Gln Arg Ala Leu Gln Asp Thr Pro Glu Val Asp Glu Gly						
	290		295		300	
Gly Gly Trp Leu Pro Gln Glu Thr Leu Glu Leu Ser Gly Ser Arg Leu						
	305		310		315	
Glu Gln						

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 tcatcgggtc caaagccctg gccggatgag tgggggtgtt ttgacctaata tggtattccc 180
 atgtcagcac agaactgtg tggcagtaga gagatgtcag gcttcagagt caacaagaac 240
 tggatttcaa actggatttg aggaccccca ccttttgtaa gtgacttatt atctgcgagc 300
 ctctgtttct ctcttcttta aatgaggaca gtaaatccca tacggcaggg tgggtggggag 360
 aatcagagat gatacagctg gtgatcacat ctggtttgtg ttcccagggg caccagacta 420
 gagtttctga gc atg gat cca acc gtc cca gtc ttc ggt aca aaa ctg aca 471
 Met Asp Pro Thr Val Pro Val Phe Gly Thr Lys Leu Thr
 1 5 10

cca atc aac gga cgt gag gag act cct tgc tac aat cag acc ctg agc 519

Pro	Ile	Asn	Gly	Arg	Glu	Glu	Thr	Pro	Cys	Tyr	Asn	Gln	Thr	Leu	Ser		
15						20					25						
ttc	acg	gtg	ctg	acg	tgc	atc	att	tcc	ctt	gtc	gga	ctg	aca	gga	aac	567	
Phe	Thr	Val	Leu	Thr	Cys	Ile	Ile	Ser	Leu	Val	Gly	Leu	Thr	Gly	Asn		
30					35					40					45		
gcg	gta	gtg	ctc	tgg	ctc	ctg	ggc	tac	cgc	atg	cgc	agg	aac	gct	gtc	615	
Ala	Val	Val	Leu	Trp	Leu	Leu	Gly	Tyr	Arg	Met	Arg	Arg	Asn	Ala	Val		
				50					55					60			
tcc	atc	tac	atc	ctc	aac	ctg	gcc	gca	gca	gac	ttc	ctc	ttc	ctc	agc	663	
Ser	Ile	Tyr	Ile	Leu	Asn	Leu	Ala	Ala	Ala	Asp	Phe	Leu	Phe	Leu	Ser		
			65				70						75				
ttc	cag	att	ata	cgt	tcg	cca	tta	cgc	ctc	atc	aat	atc	agc	cat	ctc	711	
Phe	Gln	Ile	Ile	Arg	Ser	Pro	Leu	Arg	Leu	Ile	Asn	Ile	Ser	His	Leu		
		80					85					90					
atc	cgc	aaa	atc	ctc	gtt	tct	gtg	atg	acc	ttt	ccc	tac	ttt	aca	ggc	759	
Ile	Arg	Lys	Ile	Leu	Val	Ser	Val	Met	Thr	Phe	Pro	Tyr	Phe	Thr	Gly		
		95				100					105						
ctg	agt	atg	ctg	agc	gcc	atc	agc	acc	gag	cgc	tgc	ctg	tct	gtt	ctg	807	
Leu	Ser	Met	Leu	Ser	Ala	Ile	Ser	Thr	Glu	Arg	Cys	Leu	Ser	Val	Leu		
110					115					120					125		
tgg	ccc	atc	tgg	tac	cgc	tgc	cgc	cgc	ccc	aca	cac	ctg	tca	gcg	gtc	855	
Trp	Pro	Ile	Trp	Tyr	Arg	Cys	Arg	Arg	Pro	Thr	His	Leu	Ser	Ala	Val		
				130					135					140			
gtg	tgt	gtc	ctg	ctc	tgg	ggc	ctg	tcc	ctg	ctg	ttt	agt	atg	ctg	gag	903	
Val	Cys	Val	Leu	Leu	Trp	Gly	Leu	Ser	Leu	Leu	Phe	Ser	Met	Leu	Glu		
			145				150					155					
tgg	agg	ttc	tgt	gac	ttc	ctg	ttt	agt	ggc	gct	gat	tct	agt	tgg	tgt	951	
Trp	Arg	Phe	Cys	Asp	Phe	Leu	Phe	Ser	Gly	Ala	Asp	Ser	Ser	Trp	Cys		
		160				165					170						
gaa	acg	tca	gat	ttc	atc	cca	gtc	gcg	tgg	ctg	att	ttt	tta	tgt	gtg	999	
Glu	Thr	Ser	Asp	Phe	Ile	Pro	Val	Ala	Trp	Leu	Ile	Phe	Leu	Cys	Val		
		175				180					185						
gtt	ctc	tgt	gtt	tcc	agc	ctg	gtc	ctg	ctg	gtc	agg	atc	ctc	tgt	gga	1047	
Val	Leu	Cys	Val	Ser	Ser	Leu	Val	Leu	Leu	Val	Arg	Ile	Leu	Cys	Gly		
190					195					200					205		
tcc	cgg	aag	atg	ccg	ctg	acc	agg	ctg	tac	gtg	acc	atc	ctg	ctc	aca	1095	
Ser	Arg	Lys	Met	Pro	Leu	Thr	Arg	Leu	Tyr	Val	Thr	Ile	Leu	Leu	Thr		
				210					215					220			
gtg	ctg	gtc	ttc	ctc	ctc	tgc	ggc	ctg	ccc	ttc	ggc	att	ctg	ggg	gcc	1143	
Val	Leu	Val	Phe	Leu	Leu	Cys	Gly	Leu	Pro	Phe	Gly	Ile	Leu	Gly	Ala		
			225				230						235				
cta	att	tac	agg	atg	cac	ctg	aat	ttg	gaa	gtc	tta	tat	tgt	cat	gtt	1191	
Leu	Ile	Tyr	Arg	Met	His	Leu	Asn	Leu	Glu	Val	Leu	Tyr	Cys	His	Val		

240	245	250	
tat ctg gtt tgc atg tcc ctg tcc tct cta aac agt agt gcc aac ccc			1239
Tyr Leu Val Cys Met Ser Leu Ser Ser Leu Asn Ser Ser Ala Asn Pro			
255	260	265	
atc att tac ttc ttc gtg ggc tcc ttt agg cag cgt caa aat agg cag			1287
Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg Gln Arg Gln Asn Arg Gln			
270	275	280	285
aac ctg aag ctg gtt ctc cag agg gct ctg cag gac aag cct gag gtg			1335
Asn Leu Lys Leu Val Leu Gln Arg Ala Leu Gln Asp Lys Pro Glu Val			
290	295	300	
gat aaa ggt gaa ggg cag ctt cct gag gaa agc ctg gag ctg tcg gga			1383
Asp Lys Gly Glu Gly Gln Leu Pro Glu Glu Ser Leu Glu Leu Ser Gly			
305	310	315	
agc aga ttg ggg cca tgaggagag cctctgccct gtcagtcaga cgggactttg			1438
Ser Arg Leu Gly Pro			
320			

agagcaacac tgtcctgcca cccttgacaa ttacatgcgt ttttcttagc gtttcgcctc	1498
agaaatgtct cagtggtaac tcaaggtctt caaataaatg tttatctaac ctgacagttg	1558
cagttttcac ccatggaaag cattagtctg acagtacaat gttttg	1604

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 <211> 322
 <212> PRT
 <213> Homo sapiens

<400> 33

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Gly Arg Glu Glu Thr Pro Cys Tyr Asn Gln Thr Leu Ser Phe Thr Val	
20 25 30	
Leu Thr Cys Ile Ile Ser Leu Val Gly Leu Thr Gly Asn Ala Val Val	
35 40 45	
Leu Trp Leu Leu Gly Tyr Arg Met Arg Arg Asn Ala Val Ser Ile Tyr	
50 55 60	
Ile Leu Asn Leu Ala Ala Ala Asp Phe Leu Phe Leu Ser Phe Gln Ile	
65 70 75 80	
Ile Arg Ser Pro Leu Arg Leu Ile Asn Ile Ser His Leu Ile Arg Lys	
85 90 95	
Ile Leu Val Ser Val Met Thr Phe Pro Tyr Phe Thr Gly Leu Ser Met	
100 105 110	
Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val Leu Trp Pro Ile	
115 120 125	
Trp Tyr Arg Cys Arg Arg Pro Thr His Leu Ser Ala Val Val Cys Val	
130 135 140	
Leu Leu Trp Gly Leu Ser Leu Leu Phe Ser Met Leu Glu Trp Arg Phe	
145 150 155 160	
Cys Asp Phe Leu Phe Ser Gly Ala Asp Ser Ser Trp Cys Glu Thr Ser	
165 170 175	
Asp Phe Ile Pro Val Ala Trp Leu Ile Phe Leu Cys Val Val Leu Cys	
180 185 190	
Val Ser Ser Leu Val Leu Leu Val Arg Ile Leu Cys Gly Ser Arg Lys	

<400> 35

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			20					25					30		
Leu	Ala	Met	Phe	Thr	Cys	Leu	Cys	Gly	Met	Ala	Gly	Asn	Ser	Met	Val
		35					40					45			
Ile	Trp	Leu	Leu	Gly	Phe	Arg	Met	His	Arg	Asn	Pro	Phe	Cys	Ile	Tyr
	50					55					60				
Ile	Leu	Asn	Leu	Ala	Ala	Ala	Asp	Leu	Leu	Phe	Leu	Phe	Ser	Met	Ala
65					70					75					80
Ser	Thr	Leu	Ser	Leu	Glu	Thr	Gln	Pro	Leu	Val	Asn	Thr	Thr	Asp	Lys
				85					90					95	
Val	His	Glu	Leu	Met	Lys	Arg	Leu	Met	Tyr	Phe	Ala	Tyr	Thr	Val	Gly
			100					105						110	
Leu	Ser	Leu	Leu	Thr	Ala	Ile	Ser	Thr	Gln	Arg	Cys	Leu	Ser	Val	Leu
		115					120					125			
Phe	Pro	Ile	Trp	Phe	Lys	Cys	His	Arg	Pro	Arg	His	Leu	Ser	Ala	Trp
	130					135					140				
Val	Cys	Gly	Leu	Leu	Trp	Thr	Leu	Cys	Leu	Leu	Met	Asn	Gly	Leu	Thr
145					150					155					160
Ser	Ser	Phe	Cys	Ser	Lys	Phe	Leu	Lys	Phe	Asn	Glu	Asp	Arg	Cys	Phe
			165					170						175	
Arg	Val	Asp	Met	Val	Gln	Ala	Ala	Leu	Ile	Met	Gly	Val	Leu	Thr	Pro
		180						185						190	
Val	Met	Thr	Leu	Ser	Ser	Leu	Thr	Leu	Phe	Val	Trp	Val	Arg	Arg	Ser
	195						200					205			
Ser	Gln	Gln	Trp	Arg	Arg	Gln	Pro	Thr	Arg	Leu	Phe	Val	Val	Val	Leu
	210					215					220				
Ala	Ser	Val	Leu	Val	Phe	Leu	Ile	Cys	Ser	Leu	Pro	Leu	Ser	Ile	Tyr
225					230					235					240
Trp	Phe	Val	Leu	Tyr	Trp	Leu	Ser	Leu	Pro	Pro	Glu	Met	Gln	Val	Leu
			245						250					255	
Cys	Phe	Ser	Leu	Ser	Arg	Leu	Ser	Ser	Ser	Val	Ser	Ser	Ser	Ala	Asn
		260						265						270	
Pro	Val	Ile	Tyr	Phe	Leu	Val	Gly	Ser	Arg	Arg	Ala	Thr	Gly	Cys	Pro
	275						280					285			
Pro	Gly	Pro	Trp	Gly	Leu	Cys	Ser	Asn	Arg	Arg	Phe	Ala	Arg	Ser	Pro
	290					295					300				
Ser	Trp	Lys	Val	Gly	Arg	Arg	Pro	Pro	Trp	Ala	Pro	Met	Arg	Trp	Gly
305				310						315					320
Leu	Glu	Ser	Arg	Pro	Gln	Val	Leu	Pro	Thr	Cys	Ala	Ser	Pro	Cys	Pro
			325						330					335	
Gly	Asp	Ser	Arg	Ala	Val	Ser	Cys	Leu	Pro	Pro	Arg	Pro	Cys	Gln	Val
		340						345					350		
Ser	Gly	Pro	Pro	Ser	Trp	Gly	Ser	Pro	Lys	Asp	Phe	Ala	Ala	Ala	Cys
	355						360					365			
Gly	Gly	His	Phe	Pro	Ala	Cys	Gln	Asn	Ser	Pro	Gln	His	Leu	Cys	Pro
	370					375					380				
Gly	Ser	His	Asn	Ala	Thr	Pro	Leu	Glu	Asp	Ala	Ile	Tyr	Leu	Phe	Ile
385					390					395					400
Ala	Asp	Tyr	Leu	Val	Gly	Gly	Lys	Tyr							
				405											

<210> 36

<211> 767

<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (2)...(716)

<400> 36

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His Met Val Ala Ile Val Pro Asp Leu Leu Gln Gly Arg Leu Asp Phe
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cgc ggc ttc gtg cag acc agc ctg gca acg ctg cgc ttc ttc tgc tac 97
Pro Gly Phe Val Gln Thr Ser Leu Ala Thr Leu Arg Phe Phe Cys Tyr
20 25 30

atc gtg ggc ctg agt ctc ctg gcg gcc gtc agc gtg gag cag tgc ctg 145
Ile Val Gly Leu Ser Leu Leu Ala Ala Val Ser Val Glu Gln Cys Leu
35 40 45

gcc gcc ctc ttc cca gcc tgg tac tcg tgc cgc cgc cca cgc cac ctg 193
Ala Ala Leu Phe Pro Ala Trp Tyr Ser Cys Arg Arg Pro Arg His Leu
50 55 60

acc acc tgt gtg tgc gcc ctc acc tgg gcc ctc tgc ctg ctg ctg cac 241
Thr Thr Cys Val Cys Ala Leu Thr Trp Ala Leu Cys Leu Leu Leu His
65 70 75 80

ctg ctg ctc agc agc gcc tgc acc cag ttc ttc ggg gag ccc agc cgc 289
Leu Leu Leu Ser Ser Ala Cys Thr Gln Phe Phe Gly Glu Pro Ser Arg
85 90 95

cac ttg tgc cgg acg ctg tgg ctg gtg gca gcg gtg ctg ctg gct ctg 337
His Leu Cys Arg Thr Leu Trp Leu Val Ala Ala Val Leu Leu Ala Leu
100 105 110

ctg tgt tgc acc atg tgt ggg gcc agc ctt atg ctg ctg ctg cgg gtg 385
Leu Cys Cys Thr Met Cys Gly Ala Ser Leu Met Leu Leu Leu Arg Val
115 120 125

gag cga ggc ccc cag cgg ccc cca ccc cgg ggc ttc cct ggg ctc atc 433
Glu Arg Gly Pro Gln Arg Pro Pro Pro Arg Gly Phe Pro Gly Leu Ile
130 135 140

ctc ctc acc gtc ctc ctc ttc ctc ttc tgc ggc ctg ccc ttc ggc atc 481
Leu Leu Thr Val Leu Leu Phe Leu Phe Cys Gly Leu Pro Phe Gly Ile
145 150 155 160

tac tgg ctg tcc cgg aac ctg ctc tgg tac atc ccc cac tac ttc tac 529
Tyr Trp Leu Ser Arg Asn Leu Leu Trp Tyr Ile Pro His Tyr Phe Tyr
165 170 175

cac ttc agc ttc ctc atg gcc gcc gtg cac tgc gcg gcc aag ccc gtc 577
His Phe Ser Phe Leu Met Ala Ala Val His Cys Ala Ala Lys Pro Val
180 185 190

gtc tac ttc tgc ctg ggc agt gcc cag ggc cgc agg ctg ccc ctc cgg 625

Val Tyr Phe Cys Leu Gly Ser Ala Gln Gly Arg Arg Leu Pro Leu Arg
 195 200 205

ctg gtc ctc cag cga gcg ctg gga gac gag gct gag ctg ggg gcc gtc 673
 Leu Val Leu Gln Arg Ala Leu Gly Asp Glu Ala Glu Leu Gly Ala Val
 210 215 220

agg gag acc tcc cgc cgg ggc ctg gtg gac ata gca gcc tga g 716
 Arg Glu Thr Ser Arg Arg Gly Leu Val Asp Ile Ala Ala *
 225 230 235

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<210> 37
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 <212> PRT
 <213> Homo sapiens

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 20 25 30
 Ile Val Gly Leu Ser Leu Leu Ala Ala Val Ser Val Glu Gln Cys Leu
 35 40 45
 Ala Ala Leu Phe Pro Ala Trp Tyr Ser Cys Arg Arg Pro Arg His Leu
 50 55 60
 Thr Thr Cys Val Cys Ala Leu Thr Trp Ala Leu Cys Leu Leu Leu His
 65 70 75 80
 Leu Leu Leu Ser Ser Ala Cys Thr Gln Phe Phe Gly Glu Pro Ser Arg
 85 90 95
 His Leu Cys Arg Thr Leu Trp Leu Val Ala Ala Val Leu Leu Ala Leu
 100 105 110
 Leu Cys Cys Thr Met Cys Gly Ala Ser Leu Met Leu Leu Leu Arg Val
 115 120 125
 Glu Arg Gly Pro Gln Arg Pro Pro Pro Arg Gly Phe Pro Gly Leu Ile
 130 135 140
 Leu Leu Thr Val Leu Leu Phe Leu Phe Cys Gly Leu Pro Phe Gly Ile
 145 150 155 160
 Tyr Trp Leu Ser Arg Asn Leu Leu Trp Tyr Ile Pro His Tyr Phe Tyr
 165 170 175
 His Phe Ser Phe Leu Met Ala Ala Val His Cys Ala Ala Lys Pro Val
 180 185 190
 Val Tyr Phe Cys Leu Gly Ser Ala Gln Gly Arg Arg Leu Pro Leu Arg
 195 200 205
 Leu Val Leu Gln Arg Ala Leu Gly Asp Glu Ala Glu Leu Gly Ala Val
 210 215 220
 Arg Glu Thr Ser Arg Arg Gly Leu Val Asp Ile Ala Ala
 225 230 235

<210> 38
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 <212> DNA
 <213> Mus musculus

<220>

<221> CDS

<222> (48)...(1064)

<400> 38

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Val Ile Gln Asp Trp Thr Ile Asn Ile Thr Ala Leu Lys Glu Ser Asn
      5                      10                      15

gac aat gga ata tca ttt tgt gaa gtt gtg tct cgt acc atg act ttt 152
Asp Asn Gly Ile Ser Phe Cys Glu Val Val Ser Arg Thr Met Thr Phe
      20                      25                      30                      35

ctt tcc ctc atc att gcc tta gtt ggg ctg gtt gga aat gcc aca gtg 200
Leu Ser Leu Ile Ile Ala Leu Val Gly Leu Val Gly Asn Ala Thr Val
                        40                      45                      50

tta tgg ttt ctg ggc ttc cag atg agc agg aat gcc ttc tct gtc tac 248
Leu Trp Phe Leu Gly Phe Gln Met Ser Arg Asn Ala Phe Ser Val Tyr
      55                      60                      65

atc ctc aac ctt gct ggt gct gac ttt gtc ttc atg tgc ttt caa att 296
Ile Leu Asn Leu Ala Gly Ala Asp Phe Val Phe Met Cys Phe Gln Ile
      70                      75                      80

gta cat tgt ttt tat att atc tta gac atc tac ttc atc ccc act aat 344
Val His Cys Phe Tyr Ile Ile Leu Asp Ile Tyr Phe Ile Pro Thr Asn
      85                      90                      95

ttt ttt tca tct tac act atg gtg tta aac att gct tac ctt agt ggt 392
Phe Phe Ser Ser Tyr Thr Met Val Leu Asn Ile Ala Tyr Leu Ser Gly
      100                      105                      110                      115

ctg agc atc ctc act gtc att agc act gaa cgc ttc cta tct gtc atg 440
Leu Ser Ile Leu Thr Val Ile Ser Thr Glu Arg Phe Leu Ser Val Met
                        120                      125                      130

tgg ccc atc tgg tac cgc tgc caa cgc cca agg cac aca tca gct gtc 488
Trp Pro Ile Trp Tyr Arg Cys Gln Arg Pro Arg His Thr Ser Ala Val
      135                      140                      145

ata tgt act gtg ctt tgg gtc ttg tcc ctg gtg ttg agc ctc ctg gaa 536
Ile Cys Thr Val Leu Trp Val Leu Ser Leu Val Leu Ser Leu Leu Glu
      150                      155                      160

gga aag gaa tgt ggc ttc cta tat tac act agt ggc cct ggt ttg tgt 584
Gly Lys Glu Cys Gly Phe Leu Tyr Tyr Thr Ser Gly Pro Gly Leu Cys
      165                      170                      175

aag aca ttt gat tta atc act act gca tgg tta att gtt tta ttt gtg 632
Lys Thr Phe Asp Leu Ile Thr Thr Ala Trp Leu Ile Val Leu Phe Val
      180                      185                      190                      195

gtt ctc ttg gga tcc agt ctg gcc ttg gtg ctt acc atc ttc tgt ggc 680
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Val Leu Leu Gly Ser Ser Leu Ala Leu Val Leu Thr Ile Phe Cys Gly
200 205 210

tta cac aag gtt cct gtg acc agg ttg tat gtg acc att gtg ttt aca 728
Leu His Lys Val Pro Val Thr Arg Leu Tyr Val Thr Ile Val Phe Thr
215 220 225

gtg ctt gtc ttc ctg atc ttt ggt ctg ccc tat ggg atc tac tgg ttc 776
Val Leu Val Phe Leu Ile Phe Gly Leu Pro Tyr Gly Ile Tyr Trp Phe
230 235 240

ctc tta gag tgg att agg gaa ttt cat gat aat aaa cct tgt ggt ttt 824
Leu Leu Glu Trp Ile Arg Glu Phe His Asp Asn Lys Pro Cys Gly Phe
245 250 255

cgt aac gtg aca ata ttt ctg tcc tgt att aac agc tgt gcc aac ccc 872
Arg Asn Val Thr Ile Phe Leu Ser Cys Ile Asn Ser Cys Ala Asn Pro
260 265 270 275

atc att tac ttc ctt gtt ggc tcc att agg cac cat cgg ttt caa cgg 920
Ile Ile Tyr Phe Leu Val Gly Ser Ile Arg His His Arg Phe Gln Arg
280 285 290

aag act ctc aag ctt ctt ctg cag aga gcc atg caa gac tct cct gag 968
Lys Thr Leu Lys Leu Leu Leu Gln Arg Ala Met Gln Asp Ser Pro Glu
295 300 305

gag gaa gaa tgt gga gag atg ggt tcc tca aga aga cct aga gaa ata 1016
Glu Glu Glu Cys Gly Glu Met Gly Ser Ser Arg Arg Pro Arg Glu Ile
310 315 320

aaa act gtc tgg aag gga ctg aga gct gct ttg atc agg cat aaa tag 1064
Lys Thr Val Trp Lys Gly Leu Arg Ala Ala Leu Ile Arg His Lys *
325 330 335

ctttgaagag aactatgttt ttatcacttt gtggcatttt cataatgttg tttagttgat 1124
gacccaaggt taactcagtt ggggaagtag tcaatgttgt agaagttgat tgatattgaa 1184
cttggtataa atactgagta cagtattttt gcagctatct tgctcagagc tttaccaact 1244
ccatttgatg ggactcctta taagctctat ggggtccagg agaggtgttg accacaattg 1304
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<210> 39
<211> 338
<212> PRT
<213> Mus musculus

<400> 39
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Glu Ser Asn Asp Asn Gly Ile Ser Phe Cys Glu Val Val Ser Arg Thr
20 25 30
Met Thr Phe Leu Ser Leu Ile Ile Ala Leu Val Gly Leu Val Gly Asn
35 40 45
Ala Thr Val Leu Trp Phe Leu Gly Phe Gln Met Ser Arg Asn Ala Phe
50 55 60
Ser Val Tyr Ile Leu Asn Leu Ala Gly Ala Asp Phe Val Phe Met Cys
65 70 75 80

Phe Gln Ile Val His Cys Phe Tyr Ile Ile Leu Asp Ile Tyr Phe Ile
85 90 95
Pro Thr Asn Phe Phe Ser Ser Tyr Thr Met Val Leu Asn Ile Ala Tyr
100 105 110
Leu Ser Gly Leu Ser Ile Leu Thr Val Ile Ser Thr Glu Arg Phe Leu
115 120 125
Ser Val Met Trp Pro Ile Trp Tyr Arg Cys Gln Arg Pro Arg His Thr
130 135 140
Ser Ala Val Ile Cys Thr Val Leu Trp Val Leu Ser Leu Val Leu Ser
145 150 155 160
Leu Leu Glu Gly Lys Glu Cys Gly Phe Leu Tyr Tyr Thr Ser Gly Pro
165 170 175
Gly Leu Cys Lys Thr Phe Asp Leu Ile Thr Thr Ala Trp Leu Ile Val
180 185 190
Leu Phe Val Val Leu Leu Gly Ser Ser Leu Ala Leu Val Leu Thr Ile
195 200 205
Phe Cys Gly Leu His Lys Val Pro Val Thr Arg Leu Tyr Val Thr Ile
210 215 220
Val Phe Thr Val Leu Val Phe Leu Ile Phe Gly Leu Pro Tyr Gly Ile
225 230 235 240
Tyr Trp Phe Leu Leu Glu Trp Ile Arg Glu Phe His Asp Asn Lys Pro
245 250 255
Cys Gly Phe Arg Asn Val Thr Ile Phe Leu Ser Cys Ile Asn Ser Cys
260 265 270
Ala Asn Pro Ile Ile Tyr Phe Leu Val Gly Ser Ile Arg His His Arg
275 280 285
Phe Gln Arg Lys Thr Leu Lys Leu Leu Leu Gln Arg Ala Met Gln Asp
290 295 300
Ser Pro Glu Glu Glu Glu Cys Gly Glu Met Gly Ser Ser Arg Arg Pro
305 310 315 320
Arg Glu Ile Lys Thr Val Trp Lys Gly Leu Arg Ala Ala Leu Ile Arg
325 330 335
His Lys

<210> 40
<211> 1278
<212> DNA
<213> Mus musculus

<400> 40
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gaagctacta catcgatact tcagtttgtg tcaccaggaa ccaagccatg attttgcttt 120
ccatcatcat ttccctgggt gggatgggac taaatgccat agtgctgtgg ttcctgggca 180
tccgatgca cacgaatgcc ttcactgtct acattctcaa cctggctatg gctgactttc 240
tttacctgtg ctctcagttt gtaatttgtc ttcttattgc cttttatata ttctactcaa 300
ttgacatcaa catccctttg gttctttatg ttgtgccaat atttgcttat ctttcagggtc 360
tgagcattct cagcaccatt agcattgagc gctgcttgct tgtaatatgg cccatttggt 420
atcgctgtaa acgtccaaga cacacatcag ctatcacatg ttttgtgctt tgggttatgt 480
ccttattgtt gggctctcctg gaagggaagg catgtggctt actgtttaat agctttgact 540
cttattgggt tgaacattt gatgttatca ctaatatatg gtcagttgtt ttttttggtg 600
ttctctgtgg gtctagcctc accctgcttg tcaggatctt ctgtggctca cagcgaattc 660
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<210> 45

<211> 321

<212> PRT

<213> Mus musculus

<400> 45

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			20					25					30		
Asn	Phe	Leu	Thr	Val	Ile	Ile	Ala	Val	Val	Gly	Leu	Ala	Gly	Asn	Gly


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<210> 47

<211> 322

<212> PRT

<213> Mus musculus

<400> 47

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Ala Ile Val Leu Trp Leu Leu Ala Phe His Leu Pro Arg Asn Ala Phe
           50           55           60
Ser Val Tyr Val Cys Asn Leu Ala Cys Ala Asp Phe Leu Gln Leu Cys
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Thr Gln Ile Leu Gly Ser Leu Glu Cys Phe Leu Gln Leu Asn Arg Arg
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His Thr Phe Phe Leu Thr Val Val Phe Met Phe Ala Tyr Leu Ala Gly
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Trp Pro Ile Trp Tyr His Cys Gln Arg Pro Arg His Thr Ser Ser Ile
           130          135          140
Met Cys Ala Leu Leu Trp Ala Phe Cys Leu Leu Leu Asn Phe Leu Leu
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Gly Glu Gly Cys Gly Leu Leu Phe Ser Asp Pro Lys Tyr Tyr Phe Cys
           165          170          175
Ile Thr Cys Ala Leu Ile Thr Thr Ala Leu Ile Ile Leu Leu Thr Val
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           195          200          205
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           210          215          220
Leu Val Val Phe Ile Phe Leu Gly Leu Pro Phe Gly Ile Tyr Ser Ser
           225          230          235          240
Phe Leu Ile Met Phe Lys Glu Phe Gln Ser Ile Phe Ser Tyr His Val
           245          250          255
Leu Glu Val Thr Ile Phe Leu Ser Cys Val Asn Ser Cys Ala Asn Pro
           260          265          270
Ile Ile Tyr Phe Leu Val Gly Ser Ile Arg Gln His Arg Leu Gln Trp
           275          280          285
Gln Ser Leu Lys Leu Leu Leu Gln Arg Ala Met Gln Asp Thr Pro Glu
           290          295          300
Glu Asp Ser Gly Glu Arg Val Pro Ser Gln Arg Ser Gly Glu Leu Glu
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<211> 1280
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<213> Mus musculus

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<212> PRT
<213> Mus musculus

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Arg Ile Lys Tyr Phe Ala Tyr Thr Ala Gly Leu Ser Leu Leu Thr Ala
65 70 75 80
Ile Ser Thr Gln Arg Cys Leu Ser Val Leu Phe Pro Ile Trp Tyr Lys
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Cys His Arg Pro Arg His Leu Ser Ser Val Val Ser Gly Ala Leu Trp
100 105 110
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115 120 125
Phe Trp His Pro Asn Lys His Gln Cys Phe Lys Val Asp Ile Val Phe
130 135 140

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<212> DNA

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<213> Mus musculus

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Val	Tyr	Arg	Asn	Pro	Phe	Ser	Ile	Tyr	Leu	Leu	Asp	Val	Ala	Cys	Ala
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Asp	Leu	Ile	Phe	Leu	Cys	Cys	His	Met	Val	Ala	Ile	Ile	Pro	Glu	Leu
65					70				75					80	
Leu	Gln	Asp	Gln	Leu	Asn	Phe	Pro	Glu	Phe	Val	His	Ile	Ser	Leu	Thr
			85					90					95		
Met	Leu	Arg	Phe	Phe	Cys	Tyr	Ile	Val	Gly	Leu	Ser	Leu	Leu	Ala	Ala
			100					105					110		
Ile	Ser	Thr	Glu	Gln	Cys	Leu	Ala	Thr	Leu	Phe	Pro	Ala	Trp	Tyr	Leu
		115					120					125			
Cys	Arg	Arg	Pro	Arg	Tyr	Leu	Thr	Thr	Cys	Val	Cys	Ala	Leu	Ile	Trp
		130				135					140				
Val	Leu	Cys	Leu	Leu	Leu	Asp	Leu	Leu	Leu	Ser	Gly	Ala	Cys	Thr	Gln
145					150					155				160	
Phe	Phe	Gly	Ala	Pro	Ser	Tyr	His	Leu	Cys	Asp	Met	Leu	Trp	Leu	Val
			165					170					175		
Val	Ala	Val	Leu	Leu	Ala	Ala	Leu	Cys	Cys	Thr	Met	Cys	Val	Thr	Ser
			180					185					190		
Leu	Leu	Leu	Leu	Leu	Arg	Val	Glu	Arg	Gly	Pro	Glu	Arg	His	Gln	Pro
		195					200					205			
Arg	Gly	Phe	Pro	Thr	Leu	Val	Leu	Leu	Ala	Val	Leu	Leu	Phe	Leu	Phe
		210				215					220				
Cys	Gly	Leu	Pro	Phe	Gly	Ile	Phe	Trp	Leu	Ser	Lys	Asn	Leu	Ser	Trp
225					230					235				240	
His	Ile	Pro	Leu	Tyr	Phe	Tyr	His	Phe	Ser	Phe	Phe	Met	Ala	Ser	Val
			245					250					255		
His	Ser	Ala	Ala	Lys	Pro	Ala	Ile	Tyr	Phe	Phe	Leu	Gly	Ser	Thr	Pro
		260						265					270		
Gly	Gln	Arg	Phe	Arg	Glu	Pro	Leu	Arg	Leu	Val	Leu	Gln	Arg	Ala	Leu
		275					280					285			
Gly	Asp	Glu	Ala	Glu	Leu	Gly	Ala	Gly	Arg	Glu	Ala	Ser	Gln	Gly	Gly
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Leu	Val	Asp	Met	Thr	Val										
305					310										

<210> 52
 <211> 1519
 <212> DNA
 <213> Mus musculus

<400> 52
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 agattctgat cccaaacttg atgatcatca tctttggact ggctgggctg acaggaaacg 180
 ccattgtgtt ctggctcctg ggcttccact tgcgcaggaa tgccttctca gtctacatcc 240
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 aacttctcac gttctcctca cccaacatta cttttctcat ttgcctttac accttcaggg 360
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 ctgtcctgtg ccccatctgg tatcgtgcc accgccaga acacacatca actgtcatgt 480
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 tcttagatac caaatatgta aatgactatg ggtgtatggc atcaaatttc tttaatgctg 600
 catacctgat gtttttgttt gtatgcctct gtgtgtccag cctggctctg ctggccagg 660
 tgttctgtgg cactgggcgg atgaagctta ccagattgta cgtgaccatc atgctgacca 720
 ttttggtttt tctcctctgc gggttgcct gtggcttata ctggttctctg ttattctgga 780

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<210> 53

<211> 303

<212> PRT

<213> Mus musculus

<400> 53

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20      25      30
Phe Trp Leu Leu Gly Phe His Leu Arg Arg Asn Ala Phe Ser Val Tyr
35      40      45
Ile Leu Asn Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys Arg Ile
50      55      60
Ile Ala Ser Thr Gln Lys Leu Leu Thr Phe Ser Ser Pro Asn Ile Thr
65      70      75      80
Phe Leu Ile Cys Leu Tyr Thr Phe Arg Val Ile Leu Tyr Ile Ala Gly
85      90      95
Leu Ser Met Leu Thr Ala Ile Ser Ile Glu Arg Cys Leu Ser Val Leu
100     105     110
Cys Pro Ile Trp Tyr Arg Cys His Arg Pro Glu His Thr Ser Thr Val
115     120     125
Met Cys Ala Ala Ile Trp Val Leu Ser Leu Leu Ile Cys Ile Leu Asn
130     135     140
Arg Tyr Phe Cys Gly Phe Leu Asp Thr Lys Tyr Val Asn Asp Tyr Gly
145     150     155     160
Cys Met Ala Ser Asn Phe Phe Asn Ala Ala Tyr Leu Met Phe Leu Phe
165     170     175
Val Val Leu Cys Val Ser Ser Leu Ala Leu Leu Ala Arg Leu Phe Cys
180     185     190
Gly Thr Gly Arg Met Lys Leu Thr Arg Leu Tyr Val Thr Ile Met Leu
195     200     205
Thr Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Cys Gly Leu Tyr Trp
210     215     220
Phe Leu Leu Phe Trp Ile Lys Asn Gly Phe Ala Val Phe Asp Phe Asn
225     230     235     240
Phe Tyr Leu Ala Ser Thr Val Leu Ser Ala Ile Asn Ser Ser Ala Asn
245     250     255
Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg His Arg Leu Lys His
260     265     270
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290

295

300

<210> 54
 <211> 2093
 <212> DNA
 <213> Mus musculus

<400> 54

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caaccggaca ctccccaga tatcacaggg tctaagccat caacaaagga gtacacatgg 540
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<210> 55
 <211> 282
 <212> PRT
 <213> Mus musculus

<400> 55

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          20          25          30
Ile Ala Asp Phe Leu Phe Leu Leu Gly His Ile Ile Ala Ser Thr Met
        35          40          45

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Gln	Leu	Leu	Lys	Val	Ser	Tyr	Leu	Asn	Ile	Ile	Phe	Leu	Tyr	Arg	Phe
50						55					60				
Tyr	Thr	Ile	Met	Met	Val	Leu	Tyr	Asn	Thr	Gly	Leu	Thr	Met	Leu	Ser
65					70					75					80
Ala	Ile	Asn	Thr	Lys	His	Cys	Leu	Ser	Val	Leu	Cys	Pro	Ile	Trp	Tyr
				85					90					95	
Arg	Ser	His	Cys	Thr	Lys	His	Thr	Ser	Thr	Val	Ile	Cys	Ala	Ala	Ile
			100					105					110		
Arg	Asp	Leu	Ser	Leu	Leu	Ile	Cys	Phe	Leu	Asn	Thr	Tyr	Phe	Cys	Gly
	115						120					125			
Leu	Leu	Asp	Thr	Lys	Tyr	Lys	Asn	Asp	Asn	Gly	Cys	Leu	Ala	Ser	Asn
	130					135					140				
Phe	Phe	Ile	Asn	Ala	Tyr	Leu	Met	Phe	Leu	Phe	Val	Val	Leu	Cys	Leu
145					150					155					160
Ser	Thr	Leu	Ala	Leu	Leu	Ala	Arg	Leu	Phe	Cys	Gly	Ala	Gly	Lys	Met
				165					170					175	
Lys	Phe	Thr	Arg	Leu	Phe	Val	Thr	Ile	Met	Leu	Thr	Val	Leu	Val	Phe
			180					185					190		
Leu	Leu	Cys	Gly	Leu	Pro	Ser	Ala	Ile	Tyr	Trp	Phe	Leu	Leu	Ile	Trp
	195						200					205			
Ile	Lys	Ile	Asp	Tyr	Gly	Val	Phe	Ala	Tyr	Asp	Val	Phe	Leu	Ala	Ser
	210					215					220				
Leu	Val	Leu	Ser	Ala	Val	Asn	Ser	Cys	Ala	Asn	Pro	Ile	Ile	Tyr	Phe
225					230					235					240
Phe	Val	Gly	Ser	Phe	Arg	His	Arg	Leu	Lys	His	Gln	Thr	Leu	Lys	Met
				245					250					255	
Val	Leu	Gln	Asn	Val	Leu	Gln	Asp	Thr	Pro	Glu	Thr	Ala	Glu	Asn	Met
			260					265					270		
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<210> 56
 <211> 2401
 <212> DNA
 <213> Mus musculus

<400> 56
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 aaggatgcag acatgatact ttctgattaa tgcttttact caggagatgg agaaaaacta 840
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t 2401

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<210> 57
<211> 305
<212> PRT
<213> Mus musculus

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<400> 57
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 20           25           30
Ile Val Phe Trp Leu Leu Gly Phe Arg Leu Arg Lys Asn Ala Phe Ser
 35           40           45
Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys
 50           55           60
His Ile Ile Ala Ser Thr Leu Phe Leu Leu Lys Val Ser Tyr Pro Asn
 65           70           75           80
Ile Ile Phe Arg Arg Cys Phe Phe Ser Ile Met Leu Val Leu Tyr Ile
 85           90           95
Ala Gly Leu Ser Ile Leu Ser Ala Ile Gly Thr Glu Arg Cys Leu Ser
100           105           110
Val Leu Cys Pro Ile Trp Tyr Arg Cys His Arg Pro Glu His Thr Ser
115           120           125
Thr Val Thr Cys Ala Met Ile Trp Val Leu Ser Leu Leu Ile Ser Ile
130           135           140
Leu Asn Lys Tyr Phe Cys Val Phe Leu Asp Thr Lys Tyr Val Asn Asp
145           150           155           160
Tyr Gly Cys Met Ala Ser Asn Phe Phe Thr Ala Ala Tyr Leu Met Phe
165           170           175
Leu Phe Val Val Leu Cys Leu Ser Ser Leu Ala Leu Leu Ala Arg Leu
180           185           190
Phe Cys Gly Ala Gly Arg Met Lys Leu Thr Arg Leu Tyr Val Thr Ile
195           200           205
Met Leu Thr Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Cys Gly Ile
210           215           220

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Tyr	Trp	Phe	Leu	Leu	Ser	Lys	Ile	Lys	Asn	Val	Phe	Ile	Val	Phe	Asp
225					230				235						240
Phe	Ser	Leu	Phe	Met	Ala	Ser	Ser	Val	Leu	Thr	Ala	Leu	Asn	Ser	Cys
			245					250						255	
Ala	Asn	Pro	Ile	Ile	Tyr	Phe	Phe	Val	Gly	Ser	Phe	Arg	His	Arg	Leu
			260					265					270		
Gln	His	Gln	Thr	Leu	Lys	Met	Val	Ile	Gln	Ser	Ala	Leu	Gln	Asp	Ile
	275						280					285			
Pro	Glu	Thr	Pro	Glu	Asn	Ile	Val	Glu	Met	Ser	Lys	Ser	Lys	Ala	Glu
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Pro															
305															

<210> 58
 <211> 2110
 <212> DNA
 <213> Mus musculus

<400> 58
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 aataaagaaa atatccaata caaaaaattht aaaaaaaaaa acacaaaacc acacaaaaaa 180
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 ggcacatca gaacctagtt ctctcaacat ggtgagccat ggctactcca acagacaaga 2040
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 gatgatgatg 2110

<210> 59
 <211> 305
 <212> PRT
 <213> Mus musculus

<400> 59
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 Ile Val Phe Trp Leu Leu Gly Phe Arg Met His Arg Asn Ala Phe Leu
 35 40 45
 Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys
 50 55 60
 His Ile Ile Asn Ser Thr Met Leu Leu Leu Lys Val Leu Pro Pro Thr
 65 70 75 80
 Gly Ser Leu Phe His Cys Phe Asn Thr Ile Arg Thr Val Leu Tyr Ile
 85 90 95
 Thr Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser
 100 105 110
 Val Leu Cys Pro Ile Trp Tyr Arg Cys Arg Arg Arg Glu Asn Thr Ser
 115 120 125
 Ala Val Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile
 130 135 140
 Leu Asn Ser Tyr Phe Cys Tyr Tyr Ser Gly Pro Lys Asp Val Asn Asn
 145 150 155 160
 Ser Val Cys Leu Val Ser Lys Phe Phe Ile Ser Thr Tyr Pro Met Phe
 165 170 175
 Leu Phe Val Val Leu Cys Leu Ser Thr Leu Thr Leu Leu Ala Arg Leu
 180 185 190
 Phe Cys Gly Ala Gly Lys Arg Lys Phe Thr Arg Leu Phe Val Thr Ile
 195 200 205
 Ile Leu Thr Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Leu Gly Phe
 210 215 220
 Tyr Trp Phe Leu Leu His Cys Ile Lys Gly Ser Phe Ser Val Leu His
 225 230 235 240
 Asn Arg Leu Phe Gln Ala Ser Leu Val Leu Thr Ser Val Asn Ser Cys
 245 250 255
 Ala Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg Asp Arg Val
 260 265 270
 Lys His Gln Thr Leu Lys Met Val Leu Gln Asn Ala Leu Gln Asp Thr
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 Pro Glu Thr Pro Glu Asn Lys Val Glu Met Ser Arg Ser Lys Ala Glu
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 Pro
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<210> 60
 <211> 740
 <212> DNA
 <213> Mus musculus

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 tcattctcgg actggtcggg ctgacaggaa atgccattgt gttctggctc ctgggcttcc 180

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ggatcttggt ccattgcttt aacatcatca gaattgtact ctacatcaca ggcttgagca 360
tgctcagtgc catcagcatg gagcgctgcc tgtctgtcct gtgccccatc tggatatcgt 420
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atgtgtgttt tgcacatggc atctttatca gaacataccc aatgtttttg tttgtagtcc 600
tctgtctgtc cactctggct ctgctggcca ggttgttctg tgggtgctggg aagacgaaat 660
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<210> 61
 <211> 227
 <212> PRT
 <213> Mus musculus

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<400> 61
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Asn Leu Met Ile Ile Ile Phe Gly Leu Val Gly Leu Thr Gly Asn Ala
          20          25          30
Ile Val Phe Trp Leu Leu Gly Phe His Leu His Arg Asn Ala Phe Leu
          35          40          45
Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys
          50          55          60
His Ile Ile Asp Ser Thr Val Phe Leu Leu Lys Val Pro Pro Pro Asn
          65          70          75          80
Arg Ile Leu Val His Cys Phe Asn Ile Ile Arg Ile Val Leu Tyr Ile
          85          90          95
Thr Gly Leu Ser Met Leu Ser Ala Ile Ser Met Glu Arg Cys Leu Ser
          100          105          110
Val Leu Cys Pro Ile Trp Tyr Arg Cys Arg Arg Pro Glu Asn Thr Ser
          115          120          125
Thr Val Ile Cys Ala Val Ile Trp Ile Leu Ser Leu Leu Phe Cys Ile
          130          135          140
Leu Asn Gly Tyr Phe Cys Tyr Phe Ser Gly Pro Asn Tyr Val Asn Asp
          145          150          155          160
Tyr Val Cys Phe Ala Ser Asp Ile Phe Ile Arg Thr Tyr Pro Met Phe
          165          170          175
Leu Phe Val Val Leu Cys Leu Ser Thr Leu Ala Leu Leu Ala Arg Leu
          180          185          190
Phe Cys Gly Ala Gly Lys Thr Lys Phe Thr Arg Leu Phe Val Thr Ile
          195          200          205
Ile Leu Thr Val Leu Val Phe Leu Leu Cys Gly Leu Pro Leu Gly Phe
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Phe Trp Phe
225

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<210> 62
 <211> 1979
 <212> DNA
 <213> Mus musculus

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<400> 62
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aacttgatga tcatcatctt cggactgggc gggctgacag gaaatgccat tgtgtttctgg 300
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<210> 63

<211> 305

<212> PRT

<213> Mus musculus

<400> 63

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Met Asn Glu Thr Ile Pro Gly Ser Ile Asp Ile Glu Thr Leu Ile Pro
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20           25           30
Ile Val Phe Trp Leu Leu Gly Phe Arg Met His Arg Thr Ala Phe Ser
35           40           45
Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys
50           55           60
His Ile Ile Asn Ser Thr Val Leu Leu Leu Gln Val Ser Pro Pro Asn
65           70           75           80
Ser Thr Leu Val His Cys Phe Asp Thr Ile Arg Met Val Leu Tyr Ile
85           90           95
Ala Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu His Cys Leu Ser
100          105          110
Val Leu Cys Pro Ile Trp Tyr Arg Cys Arg Arg Pro Glu His Thr Ser
115          120          125
Thr Val Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile
130          135          140
Leu Ser Gly Tyr Phe Cys Asn Phe Phe Leu His Lys Tyr Val Tyr Tyr

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145		150		155		160									
Ser	Val	Cys	Arg	Ala	Leu	Glu	Phe	Cys	Ile	Gly	Thr	Tyr	Pro	Met	Phe
		165		170		175									
Leu	Phe	Val	Val	Leu	Cys	Leu	Ser	Thr	Leu	Ala	Leu	Leu	Val	Arg	Leu
		180		185		190									
Phe	Cys	Gly	Thr	Gly	Lys	Ala	Lys	Phe	Thr	Arg	Leu	Phe	Val	Thr	Ile
		195		200		205									
Met	Leu	Thr	Val	Leu	Val	Phe	Leu	Leu	Cys	Gly	Leu	Pro	Leu	Cys	Phe
		210		215		220									
Phe	Trp	Phe	Leu	Val	Val	Trp	Ile	Lys	Arg	Pro	Leu	Ser	Val	Leu	Asn
		225		230		235									
Ile	Thr	Phe	Tyr	Phe	Ala	Ser	Ile	Val	Leu	Thr	Val	Val	Asn	Ser	Cys
		245		250		255									
Ala	Asn	Pro	Ile	Ile	Tyr	Phe	Phe	Val	Gly	Ser	Phe	Arg	His	Arg	Leu
		260		265		270									
Lys	Gln	Gln	Asn	Leu	Lys	Met	Val	Leu	Gln	Asn	Ala	Leu	Gln	Asp	Thr
		275		280		285									
Ala	Glu	Thr	Pro	Glu	Asn	Val	Ala	Glu	Ile	Ser	Arg	Ser	Lys	Ala	Glu
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Pro															
305															

<210> 64
 <211> 1485
 <212> DNA
 <213> Mus musculus

<400> 64
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 cgctgcctgt ctatcctgtg ccccatctgg tatcgctgcc accgcccaga acacacatca 540
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 ctttatcgga acatacccaa tgtttttgct tgtagtcctc tgtctgtcca ccatggctct 720
 gctggccagg ttgttctgtg gttctgggaa gacgaaattt accagattat ttgtgacat 780
 catgcttacc gttttgggtt ttcttctctg ctgtgtttgc ccctgggctt cttctgggtc 840
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 agagcctctg cctggacctc agaggtggag ttggagtgc aactgcccta cgcttgacca 1140
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 tatcatgtct gcatccttct tgacattaat ccaattctca tactaacttc atctgaaact 1320
 ttcttctgtt ttctttggaa cttttgttgc catagtaata gccagatcc agcaccatga 1380
 ctacttgtc tgtgattatt ctgtacctga atgtaaagaa aaaggcagga gatgatcctg 1440
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<210> 65
 <211> 300

<212> PRT
<213> Mus musculus

<400> 65

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Phe	Gly	Leu	Val	Gly	Leu	Pro	Gly	Asn	Ala	Ile	Val	Phe	Trp	Leu	Leu	
			20					25					30			
Gly	Phe	Cys	Leu	His	Arg	Asn	Ala	Phe	Leu	Val	Tyr	Ile	Leu	Asn	Leu	
		35					40					45				
Ala	Leu	Ala	Asp	Val	Leu	Phe	Leu	Leu	Cys	His	Ile	Ile	Asn	Ser	Thr	
	50					55					60					
Val	Leu	Leu	Leu	Lys	Val	Pro	His	Pro	Thr	Val	Ile	Leu	Val	His	Cys	
65					70					75					80	
Phe	Asn	Ile	Ile	Arg	Ile	Val	Leu	Tyr	Ile	Thr	Gly	Leu	Ser	Met	Leu	
				85					90					95		
Ser	Ala	Ile	Ile	Thr	Glu	Arg	Cys	Leu	Ser	Ile	Leu	Cys	Pro	Ile	Trp	
			100					105					110			
Tyr	Arg	Cys	His	Arg	Pro	Glu	His	Thr	Ser	Thr	Ala	Met	Cys	Ala	Val	
		115				120						125				
Ile	Trp	Val	Leu	Ser	Leu	Leu	Ile	Cys	Ile	Leu	Gly	Lys	Tyr	Phe	Cys	
	130					135					140					
Asn	Phe	Phe	Leu	His	Lys	Tyr	Val	Asn	Tyr	Ser	Val	Cys	Leu	Ala	Leu	
145					150					155					160	
Asp	Ser	Phe	Ile	Gly	Thr	Tyr	Pro	Met	Phe	Leu	Leu	Val	Val	Leu	Cys	
				165					170					175		
Leu	Ser	Thr	Met	Ala	Leu	Leu	Ala	Arg	Leu	Phe	Cys	Gly	Ser	Gly	Lys	
			180					185					190			
Thr	Lys	Phe	Thr	Arg	Leu	Phe	Val	Thr	Ile	Met	Leu	Thr	Val	Leu	Val	
	195					200						205				
Phe	Leu	Leu	Cys	Leu	Gly	Leu	Pro	Leu	Gly	Phe	Phe	Trp	Phe	Leu	Leu	
	210					215					220					
Leu	Trp	Ile	Lys	Gly	Ala	Tyr	Ser	Val	Leu	Gly	Tyr	Arg	Phe	Tyr	Phe	
225					230					235					240	
Ala	Ser	Ile	Val	Leu	Thr	Ala	Val	Asn	Ser	Cys	Ala	Asn	Pro	Ile	Ile	
				245					250					255		
Tyr	Phe	Phe	Met	Gly	Ser	Phe	Arg	Gln	Arg	Leu	Gln	His	Lys	Thr	Leu	
			260					265					270			
Lys	Ile	Val	Leu	Gln	Ser	Ala	Leu	His	Asp	Thr	Pro	Glu	Thr	Pro	Glu	
		275					280					285				
Asn	Met	Val	Glu	Met	Ser	Arg	Ser	Lys	Ala	Glu	Pro					
	290					295					300					

<210> 66
<211> 1518
<212> DNA
<213> Mus musculus

<400> 66

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catcctaaac	ttggccctag	ctgacttctc	ctaccttctc	tgtcacatca	tagattccac	360
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<210> 67

<211> 303

<212> PRT

<213> Mus musculus

<400> 67

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20     25     30
Ile Val Leu Trp Leu Leu Gly Phe His Leu Gln Arg Asn Ala Phe Leu
35     40     45
Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Leu Tyr Leu Leu Cys
50     55     60
His Ile Ile Asp Ser Thr Met Leu Leu Leu Lys Val Pro Pro Pro Asn
65     70     75     80
Trp Ile Leu Val His Cys Phe Arg Thr Ile Gln Ile Phe Leu Tyr Ile
85     90     95
Thr Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser
100    105    110
Val Leu Cys Pro Ile Trp Tyr Arg Cys Arg Arg Pro Glu Asn Thr Ser
115    120    125
Thr Val Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile
130    135    140
Leu His Gly Tyr Phe Cys Cys Tyr Phe Ser Gly Leu Ser Tyr Glu Asn
145    150    155    160
Tyr Ser Val Cys Phe Ala Ser Ala Ile Ile Ser Ser Tyr Pro Thr
165    170    175
Phe Leu Leu Val Val Leu Cys Leu Ser Thr Leu Ala Leu Leu Ala Arg
180    185    190
Leu Phe Cys Gly Ala Gly Lys Arg Lys Phe Ser Arg Leu Phe Val Thr
195    200    205
Ile Ile Leu Thr Val Leu Val Phe Leu Leu Cys Gly Leu Pro Trp Gly
210    215    220
Ala Leu Trp Phe Pro Leu Leu Trp Ile Gln Gly Gly Phe Trp Lys Arg
225    230    235    240
Leu Phe Gln Ala Ser Ile Val Leu Ser Ser Val Asn Ser Cys Ala Asn

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				245						250					255				
Pro	Ile	Ile	Tyr	Phe	Phe	Val	Gly	Ser	Phe	Arg	His	Arg	Leu	Lys	His				
			260					265					270						
Gln	Thr	Leu	Lys	Met	Val	Leu	Gln	Asn	Ala	Leu	Gln	Asp	Thr	Pro	Glu				
		275					280					285							
Thr	Thr	Glu	Asn	Met	Val	Glu	Met	Ser	Arg	Ser	Lys	Ala	Glu	Pro					
	290					295					300								

<210> 68
 <211> 1500
 <212> DNA
 <213> Mus musculus

<400> 68
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 <213> Mus musculus

<400> 69
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 Leu Ala Leu Ala Asp Phe Leu Phe Leu Leu Cys His Ile Ile Asn Ser
 35 40 45
 Thr Val Leu Leu Leu Lys Val Pro Leu Pro Asn Trp Ile Leu Phe His
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 Cys Phe Asn Thr Ile Arg Ile Val Leu Tyr Ile Thr Gly Leu Asn Met

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Trp	Tyr	His	Cys	Cys	Arg	Pro	Glu	His	Thr	Ser	Thr	Val	Met	Cys	Ala
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Val	Ile	Trp	Val	Leu	Ser	Leu	Leu	Ile	Cys	Ile	Leu	Asn	Glu	Tyr	Phe
		115					120					125			
Cys	Asp	Phe	Phe	Gly	Thr	Lys	Leu	Val	Asn	Tyr	Tyr	Val	Cys	Leu	Ala
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Ser	Asn	Phe	Phe	Met	Gly	Ala	Tyr	Leu	Leu	Phe	Leu	Phe	Val	Val	Leu
145					150					155					160
Cys	Leu	Ser	Thr	Leu	Ala	Leu	Leu	Ala	Arg	Leu	Phe	Cys	Gly	Ala	Gly
			165						170					175	
Asn	Thr	Lys	Phe	Thr	Arg	Phe	His	Met	Thr	Ile	Leu	Leu	Thr	Pro	Leu
			180					185					190		
Phe	Phe	Leu	Leu	Cys	Gly	Leu	Pro	Phe	Ala	Ile	Cys	Phe	Leu	Leu	Phe
		195					200					205			
Lys	Ile	Lys	Asp	Asp	Phe	His	Val	Phe	Tyr	Ile	Asn	Leu	Phe	Leu	Ala
	210					215					220				
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			245						250					255	
Met	Val	Leu	Gln	Ser	Ala	Leu	Gln	Asp	Thr	Pro	Glu	Thr	Pro	Glu	Asn
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 <212> DNA
 <213> Mus musculus

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<210> 71
<211> 301
<212> PRT
<213> Mus musculus

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20         25         30
Ile Val Phe Trp Ile Leu His Phe Pro Leu Arg Arg Asn Ala Phe Lys
35         40         45
Val Tyr Ile Leu Asn Leu Asp Leu Ala Asp Phe Phe Phe Leu Leu Gly
50         55         60
His Thr Ile Asp Ser Ile Leu Leu Leu Leu Asn Val Phe Tyr Pro Ile
65         70         75         80
Ile Phe Ile Leu Cys Phe Tyr Ile Ile Met Met Val Leu Tyr Ile Ala
85         90         95
Gly Leu Ser Met Leu Thr Ala Ile Ser Thr Glu His Gly Leu Ser Val
100        105        110
Leu Cys Pro Ile Trp Asp Cys Cys His His Pro Glu His Thr Ser Ala
115        120        125
Ala Met Cys Ala Val Ile Trp Val Leu Ser Leu Leu Ile Cys Ile Leu
130        135        140
Asn Ser Tyr Phe Gly Phe Leu His Ser Lys Tyr Glu Asn Asp Asn Gly
145        150        155        160
Cys Leu Ala Leu Asn Phe Phe Thr Ser Ala Tyr Leu Met Phe Leu Phe
165        170        175
Val Asp Leu Cys Leu Ser Ser Leu Ala Leu Leu Ala Arg Leu Phe Cys
180        185        190
Asp Val Gly Gln Met Lys Leu Thr Arg Tyr Val Thr Ile Leu Leu Thr
195        200        205
Ala Leu Val Phe Leu Leu Cys Arg Leu Asn Phe Gly Ile Tyr Trp Phe
210        215        220
Leu Leu Cys Lys Ile Lys Asp Ala Phe His Val Phe Thr Leu Val Phe
225        230        235        240

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Tyr	Leu	Glu	Ser	Leu	Val	Met	Thr	Ala	Ile	Asn	Ser	Cys	Ala	Asn	Ser
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			260					265					270		
Thr	Leu	Lys	Met	Val	Leu	Gln	Arg	Thr	Met	Asp	Thr	Pro	Glu	Thr	Pro
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<210> 72
 <211> 2758
 <212> DNA
 <213> Mus musculus

<400> 72

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 <211> 304
 <212> PRT
 <213> Mus musculus

<400> 73
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 Ile Val Phe Trp Ile Leu Gly Phe Arg Phe His Arg Asn Ala Ile Leu
 35 40 45
 Val Tyr Ile Leu Asn Leu Ala Leu Ala Asp Phe Phe Phe Leu Leu Cys
 50 55 60
 His Ile Ile Asn Ser Thr Met His Leu Phe Lys Val Arg Pro His Asn
 65 70 75 80
 Ser Ile Phe Ile His Cys Phe Asp Thr Ile Arg Thr Val Leu Tyr Ile
 85 90 95
 Thr Gly Leu Ser Met Leu Ser Ala Ile Ser Thr Asp Arg Cys Leu Ser
 100 105 110
 Val Leu Cys Pro Ile Trp Tyr Arg Cys His Arg Pro His Thr Ser Thr
 115 120 125
 Ile Met Cys Val Val Ile Trp Val Leu Ser Leu Ile Cys Leu Leu
 130 135 140
 Asn Arg Tyr Phe Cys Asp Leu Phe Gly Pro Lys Tyr Glu Ile Asn Ser
 145 150 155 160
 Val Cys Gln Ala Ser Glu Phe Phe Ile Arg Ile Tyr Pro Ile Phe Leu
 165 170 175
 Phe Val Val Leu Cys Phe Ser Thr Leu Thr Leu Leu Ala Arg Leu Phe
 180 185 190
 Cys Gly Ala Gly Lys Lys Lys Phe Thr Arg Leu Phe Met Thr Ile Met
 195 200 205
 Val Thr Ile Leu Val Phe Leu Leu Cys Gly Leu Pro Leu Gly Phe Leu
 210 215 220
 Trp Phe Leu Leu Pro Trp Ile Glu Gly Gly Phe Ser Ile Leu Asp Tyr
 225 230 235 240
 Arg Phe Phe Leu Ala Ser Leu Val Leu Thr Ala Val Asn Ser Cys Ala
 245 250 255
 Asn Pro Ile Ile Tyr Phe Phe Val Gly Ser Tyr Arg His Pro Leu Lys
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 His Lys Thr Leu Lys Met Val Leu Gln Ser Ala Leu Gln Asp Thr Pro
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<210> 74
 <211> 1738
 <212> DNA
 <213> Mus musculus

<400> 74

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<210> 75

<211> 303

<212> PRT

<213> Mus musculus

<400> 75

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Phe Val Phe Leu Leu Gly Phe His Leu His Arg Asn Ala Phe Leu Val
 35             40             45
Tyr Ile Leu Asn Leu Ala Leu Thr Asp Phe Leu Phe Leu Leu Cys His
 50             55             60
Ile Ile Asn Ser Thr Val Ile Leu Leu Asn Val Pro Leu Pro Asn Met
 65             70             75             80
Ile Leu Val His Cys Phe Ser Thr Ile Arg Ile Phe Leu Asn Ile Thr
 85             90             95
Gly Leu Ser Ile Leu Ser Ala Ile Ser Thr Glu Arg Cys Leu Ser Val
 100            105            110
Leu Cys Pro Ile Trp Tyr Arg Cys His His Pro Glu His Thr Ser Thr
 115            120            125
Val Met Cys Ala Val Ile Val Leu Ser Leu Leu Ile Cys Thr Leu Tyr
 130            135            140
Arg Tyr Phe Cys Phe Phe Phe Gly Pro Lys Tyr Val Phe Asp Ser Val
 145            150            155            160
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Cys Leu Ala Thr Thr Tyr Phe Ile Arg Thr Tyr Pro Met Phe Leu Phe
 165 170 175
 Met Val Leu Cys Leu Ser Thr Leu Ala Leu Leu Ala Arg Leu Phe Cys
 180 185 190
 Gly Ala Gly Lys Lys Lys Phe Thr Arg Leu Phe Val Thr Ile Met Leu
 195 200 205
 Thr Val Leu Val Phe Leu Leu Cys Gly Met Pro Leu Gly Phe Phe Trp
 210 215 220
 Phe Val Phe Pro Trp Ile Asn Cys Asp Phe Ser Val Leu Asp Tyr Arg
 225 230 235 240
 Leu Phe Leu Ala Ser Ile Val Leu Thr Ala Val Asn Ser Tyr Gly Asn
 245 250 255
 Pro Ile Ile Tyr Phe Phe Val Gly Ser Phe Arg Asn Arg Leu Lys His
 260 265 270
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 275 280 285
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<210> 76
 <211> 1011
 <212> DNA
 <213> Mus musculus

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<210> 77
 <211> 274
 <212> PRT
 <213> Mus musculus

<400> 77
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 Tyr Ile Leu Asn Ala Gly Ala Asn Phe Leu Phe Leu Cys Pro Tyr Ile
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Gly Val Ser Met Ile Thr Ala Ile Ser Val Glu Tyr Trp Leu Ser Val				
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Ile Trp Ser Asn Trp Tyr His Gly Arg His Pro Lys His Thr Ser Ala				
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Phe Ile Cys Thr Leu Leu Trp Ala Val Ser Leu Leu Leu Ser Leu Pro				
	115		120	125
His Glu Ile Ile Cys Gly Leu Leu Asp His Ile Tyr Asn Trp Asp Met				
	130		135	140
Cys Trp Lys Cys Lys Leu Ile Ile Val Val Trp Leu Leu Ile Glu Phe				
	145		150	155
Val Val Leu Ser Gln Ser Asn Gln Ala Met Met Phe Arg Ile Phe Cys				
	165		170	175
Gly Ser Gln Gln Thr Pro Met Thr Arg Leu Phe Val Thr Ile Val Leu				
	180		185	190
Thr Ala Leu Val Val Leu Ile Cys Gly Phe Pro Leu Gly Ile Tyr Ile				
	195		200	205
Tyr Phe Leu Tyr Trp Thr Thr Asp Val Tyr Phe Ile Met Pro Cys Asn				
	210		215	220
Ser Phe His Glu Thr Ile Leu Leu Leu Ser Ala Val Asn Ser Cys Ala				
	225		230	235
Asn Pro Ile Ile Cys Leu Leu Val Gly Ser Ile Lys His Cys Gln Phe				
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Pro Glu				

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 <211> 1358
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 <213> Mus musculus

<400> 79
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 Gly Cys Gly Phe Leu Phe Arg Tyr Ser Glu Tyr Tyr Phe Cys Ile Thr
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 Ser Val Ser Ser Leu Thr Leu Leu Val Lys Ile Ile Cys Gly Ser His
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 Arg Ile Pro Val Thr Arg Leu Phe Val Thr Ile Cys Phe Thr Val Val
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 Val Phe Ile Ile Phe Gly Met Pro Leu Gly Ile Cys Trp Phe Leu Phe
 195 200 205
 Pro Ser Ile Ile Glu Phe His Lys Ile Phe Ser Asn Asn Phe Tyr Glu
 210 215 220
 Met Ile Ala Phe Leu Ser Cys Ile Asn Ser Cys Ala Asn Pro Ile Ile
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 <212> DNA
 <213> Mus musculus

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<210> 81

<211> 273

<212> PRT

<213> Mus musculus

<400> 81

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      20           25           30
Tyr Ile Phe Asn Leu Ser Gly Ala Asn Phe Leu Phe Leu Cys Thr His
      35           40           45
Ile Val Phe Ser Leu Glu Ile Ser Leu Gly Ser Phe Thr Thr Ser Thr
      50           55           60
Phe Thr Trp Ala Leu Phe Ser Val Asn Val Thr Ile Leu Ala Tyr Leu
      65           70           75           80
Ala Gly Val Ser Met Ile Thr Ala Ile Ser Val Glu Tyr Trp Leu Ser
      85           90           95
Val Leu Trp Pro Thr Trp Tyr His Ala Gln Arg Pro Lys His Thr Ser
      100          105          110
Thr Val Ile Cys Thr Leu Leu Trp Val Phe Ser Leu Leu Leu Thr Leu

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145	150	155
Phe Val Val Leu Ser Arg Ser Asn Gln Ala Leu Leu Phe Arg Val Phe		
165	170	175
Cys Gly Ser Gln Gln Thr Pro Val Thr Arg Leu Leu Val Thr Ile Met		
180	185	190
Leu Thr Ala Leu Val Val Leu Ile Cys Gly Phe Gly Ile Gly Ile Cys		
195	200	205
Phe Phe Tyr Trp Lys Lys Glu Asn Ser Ile Met Pro Cys Gly Tyr		
210	215	220
Phe Tyr Glu Thr Ile Leu Leu Leu Ser Gly Val Asn Ser Cys Ala Asn		
225	230	235
Pro Ile Ile Cys Leu Phe Val Gly Ser Ile Lys His Cys Gln Phe Gln		
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 <212> DNA
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<210> 83
 <211> 264
 <212> PRT
 <213> Mus musculus

<400> 83

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Phe Val Ile Ile Tyr Thr Ile Lys Ser Ile Ser Asn Asp Ile Leu Ser
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Phe Phe Ile Phe Val Pro Ala Phe Leu Tyr Leu Leu Ser Leu Ser Ile
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Leu Ile Thr Ile Ser Ile Glu Arg Cys Leu Tyr Val Met Trp Pro Ile
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Trp Tyr His Cys Gln Cys Pro Arg His Thr Ser Ala Val Ile Cys Val
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Tyr Phe Leu Leu Phe Ser Asp Pro Asn Ser Phe Trp Tyr Gln Thr Phe
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Asp Ile Ile Ile Thr Val Thr Ile Val Leu Phe Val Val Leu Cys Gly
145 150 155 160
Ser Ser Leu Ile Leu Leu Phe Arg Ile Phe Cys Gly Ser Gln Gln Ile
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Pro Val Thr Arg Leu Asp Val Ile Ile Ala Leu Arg Val Leu Phe Phe
180 185 190
Leu Ile Phe Ser Phe Pro Phe Trp Ile Tyr Trp Leu Leu Asp Gln Arg
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Ile Gly Arg Arg Cys Asn Phe Leu Asn Glu Met Ile Phe Leu Ser Cys
210 215 220
Ile Lys Ser Cys Val Asn Ser Ile Ile Tyr Phe Leu Val Ala Ser Ile
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<210> 84

<211> 2349

<212> DNA

<213> Mus musculus

<400> 84

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<211> 273

<212> PRT

<213> Mus musculus

<400> 85

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 225 230 235 240
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 <212> DNA
 <213> Mus musculus

<400> 86
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<210> 87
 <211> 270
 <212> PRT
 <213> Mus musculus

<400> 87
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 Tyr Ile Leu Asn Leu Ala Gly Ala Asp Phe Leu Phe Leu His Ser Gln
 35 40 45
 Phe Leu Phe Tyr Leu Leu Ala Ile Phe Pro Ser Ile Pro Ile Gln Ile
 50 55 60

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Ser	Ile	Leu	Ser	Thr	Ile	Ser	Ile	Glu	Arg	Cys	Leu	Cys	Val	Met	Trp
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Pro	Ile	Trp	Tyr	Arg	Cys	Gln	Arg	Pro	Arg	His	Thr	Ser	Ser	Val	Thr
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Cys	Ser	Leu	Leu	Trp	Ala	Leu	Ser	Leu	Leu	Phe	Ala	Leu	Leu	Asp	Gly
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Met	Gly	Cys	Gly	Leu	Leu	Phe	Asn	Ser	Phe	Asp	Gln	Ser	Trp	Cys	Leu
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Lys	Phe	Asp	Leu	Ile	Ile	Cys	Ala	Trp	Ser	Ile	Val	Leu	Phe	Val	Val
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			165						170					175	
Gln	Gln	Ile	Pro	Val	Thr	Arg	Leu	Tyr	Val	Thr	Ile	Ala	Leu	Thr	Val
			180					185					190		
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225					230					235					240
Tyr	Phe	Leu	Val	Gly	Phe	Ile	Arg	Gln	Arg	Lys	Phe	Gln	Gln	Lys	Ser
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 <212> DNA
 <213> Mus musculus

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<210> 91

<211> 270

<212> PRT

<213> Mus musculus

<400> 91

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Tyr Val Leu Asn Leu Ala Leu Ala Asp Ser Phe Phe Leu Gly Cys Asp
 35             40             45
Phe Ile Glu Phe Leu Leu Arg Ile Ile Asp Phe Ile Tyr Ala His Lys
 50             55             60
Leu Ser Lys Asp Ile Leu Gly Asn Thr Ala Ile Ile Pro Tyr Ile Ala
 65             70             75             80
Gly Gln Asn Val Leu Ser Ala Ile Ser Met Glu His Cys Leu Ser Val
 85             90             95
Leu Trp Pro Ile Trp Tyr His Tyr His His Pro Arg Asn Met Ser Ala
100            105            110
Ile Ile Cys Ala Leu Ile Trp Val Leu Tyr Phe Leu Met Gly Ile Leu
115            120            125
His Trp Phe Phe Ser Val Phe Leu Gly Glu Ala His His His Leu Arg
130            135            140
Lys Lys Val Asp Phe Thr Ile Thr Ala Phe Leu Ile Phe Leu Phe Met
145            150            155            160
Leu His Ser Val Ser Ser Leu Ala Leu Leu Leu Arg Ile Leu Cys Gly
165            170            175
Ser Arg Arg Lys Pro Leu Ser Arg Leu Tyr Val Thr Ile Ala Leu Thr
180            185            190
Val Met Val Tyr Leu Ile Ser Gly Leu Pro Leu Gly Leu Tyr Leu Phe
195            200            205
Leu Leu Tyr Trp Phe Gly Val His Leu His His Pro Ser Cys His Asn
210            215            220
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Tyr Gln Val Thr Ser Val Leu Pro Cys Val Asn Ser Tyr Asn Asn Pro
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<210> 92
 <211> 1178
 <212> DNA
 <213> Mus musculus

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<210> 93
 <211> 243
 <212> PRT
 <213> Mus musculus

<400> 93
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 Tyr Val Leu Asn Leu Ala Leu Ala Asp Ser Val Phe Leu Cys Cys His
 35 40 45
 Phe Ile Asp Ser Leu Leu Cys Ile Ile Asp Phe Tyr Leu Cys Pro Asp
 50 55 60
 Ala Asp Thr Leu Gly Asn Ala Glu Ile Ile Pro Tyr Ile Thr Gly Leu
 65 70 75 80
 Ser Ile Leu Ser Ala Ile Ser Met Glu Asp Tyr Leu Ser Val Leu Trp
 85 90 95
 Pro Ile Trp Tyr His Cys His His Pro Arg Asn Met Ser Thr Ile Leu
 100 105 110
 Cys Ala Leu Ile Trp Val Leu Ser Phe Leu Met Gly Ile Leu Asp Trp
 115 120 125

Phe Phe Ser Gly Phe Leu Gly Glu Thr His His Tyr Leu Lys Asn Val
 130 135 140
 Asp Phe Ile Ile Thr Ala Phe Leu Ile Phe Phe Phe Ile Leu Leu Leu
 145 150 155 160
 Ser Gly Ser Ser Leu Ala Leu Leu Leu Arg Ile Leu Cys Gly Ser Arg
 165 170 175
 Arg Lys Pro Leu Ser Arg Leu Tyr Ala Thr Ile Ser Leu Thr Val Met
 180 185 190
 Val Tyr Leu Ile Cys Gly Leu Pro Leu Gly Leu Tyr Leu Phe Leu Leu
 195 200 205
 His Ser Phe Gly Val Asn Leu His His Pro Phe Cys His Leu Tyr Lys
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 Val Thr Ala Val Leu Ser Cys Val Asn Ile Ser Thr Asn Pro Ile Asn
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 His Leu Ile

<210> 94

<211> 2416

<212> DNA

<213> Mus. musculus

<400> 94

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<210> 95

<211> 269

<212> PRT

<213> Mus musculus

<400> 95

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Val Leu Asn Leu Ala Leu Gly Asp Ser Phe Phe Leu Cys Cys His Phe
          35          40          45
Ile Asp Ser Leu Leu Trp Ile Ile Asp Phe Ile Tyr Ala His Lys Leu
          50          55          60
Asn Lys Asp Ile Leu Gly Asn Ala Ala Ile Ile Pro Tyr Met Ala Gly
65          70          75          80
His Ser Leu Leu Ser Ala Ile Ser Met Glu His Cys Leu Ser Val Leu
          85          90          95
Trp Pro Ile Trp Tyr Asp Phe His His Gln Ser Asn Met Ser Ala Ile
          100          105          110
Leu Tyr Ala Leu Ile Trp Val Leu Ser Ile Leu Ile Gly Ile Leu Asp
          115          120          125
Trp Phe Phe Leu Gly Phe Leu Gly Glu Thr Asn His His Leu Cys Glu
          130          135          140
Asn Val Ala Phe Ile Ile Thr Ala Phe Leu Ile Phe Leu Phe Met Leu
145          150          155          160
Leu Ser Val Ser Ser Leu Ala Leu Leu Leu Arg Ile Leu Cys Gly Pro
          165          170          175
Arg Lys Lys Pro Leu Ser Arg Leu Val Thr Ile Ser Leu Thr Val Met
          180          185          190
Val Tyr Leu Ile Cys Gly Leu Pro Leu Gly Leu Tyr Phe Phe Leu Leu
          195          200          205
His Trp Phe Gly Val His Leu His Tyr Pro Ser Cys His Ile Tyr Gln
210          215          220
Val Thr Ala Val Leu Ser Cys Val Asn Ser Ser Ala Asn Pro Ile Ile
225          230          235          240
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<210> 96

<211> 1954

<212> DNA

<213> Mus musculus

<400> 96

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<210> 97

<211> 272

<212> PRT

<213> Mus musculus

<400> 97

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  20             25             30
Tyr Val Leu Asn Leu Ala Leu Ala Asp Ser Phe Phe Leu Ser Cys Gln
  35             40             45
Phe Ile Asp Ser Leu Leu Trp Ile Leu Asp Phe Ile Ala His Lys Leu
  50             55             60
Ser Lys Asp Ile Leu Trp Asn Ala Ala Ile Ile Pro Asn Asn Ala Gly
  65             70             75             80
Leu Ser Tyr Leu Ser Ala Ile Ser Met Glu His Cys Leu Pro Val Leu
  85             90             95
Trp Pro Ile Trp His His Cys His His Thr Arg Asn Met Ser Ala Ile
 100            105            110
Ile Cys Ala Leu Ile Trp Val Leu Ser Phe Leu Met Gly Ile Leu Asp
 115            120            125
Tyr Phe Ser Gly Phe Leu Gly Glu Thr His His Gln Leu Trp Lys Asn

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	165		170	175
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	180		185	190
Thr Val Met Val Tyr Leu Ile Cys Gly Leu Pro Val Gly Leu Tyr Leu				
	195		200	205
Phe Leu Leu Asn Trp Phe Gly Val His Leu His His Pro Ile Cys His				
	210		215	220
Ile Tyr Gln Val Thr Ala Leu Leu Pro Phe Val Asn Ser Phe Ala Lys				
225		230		235
Pro Ile Ile Ser Phe Ile Val Gly Ser Phe Arg His Cys Arg Lys His				
	245		250	255
Trp Ser Arg Gln Thr Ile Ile Lys Arg Ala Leu Glu Asp Thr Pro Glu				
	260		265	270

<210> 98
 <211> 1893
 <212> DNA
 <213> Mus musculus

<400> 98

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<210> 99
 <211> 262
 <212> PRT
 <213> Mus musculus

<400> 99
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 Tyr Val Leu Asn Leu Ala Leu Gly Asp Ser Phe Phe Cys Cys His Phe
 35 40 45
 Ile Asp Ser Leu Leu Trp Ile Ile Asp Phe Ile Tyr Ala His Lys Leu
 50 55 60
 Ser Lys Asp Ile Leu Gly Asn Val Ala Ile Val Pro Tyr Ile Ala Gly
 65 70 75 80
 Leu Ser Val Leu Ser Ala Ile Ser Met Glu Asn Leu Phe Ile Leu Trp
 85 90 95
 Pro Ile Trp Tyr His Cys His His Pro Arg Asn Met Ser Ala Ile Leu
 100 105 110
 Cys Ala Leu Ile Trp Val Leu Phe Phe Leu Met Gly Ile Leu Gly Gly
 115 120 125
 Ser Ser Asp Phe Trp Val Lys Leu Ile Ile Asp Phe Ile Ile Pro Ala
 130 135 140
 Phe Leu Ile Phe Phe Leu Phe Met Leu Leu Ser Gly Ser Ile Leu Ala
 145 150 155 160
 Leu Leu Leu Arg Ile Leu Tyr Gly Ser Arg Arg Lys Ser Leu Ser Arg
 165 170 175
 Leu Tyr Val Asn Ile Ser Leu Thr Val Met Val Tyr Leu Ile Cys Gly
 180 185 190
 Leu Pro Leu Gly Leu Tyr Leu Val Leu Leu Tyr Cys Phe Gly Val His
 195 200 205
 Leu His His Pro Ser Pro His Ile Tyr Gln Val Thr Val Val Leu Ser
 210 215 220
 Tyr Val Asp Ser Ser Ala Asn His Ile Phe Tyr Phe Leu Ala Gly Ser
 225 230 235 240
 Phe Arg Tyr Cys Arg Lys His Trp Ser Leu Gln Thr Leu Leu Lys Arg
 245 250 255
 Thr Leu Glu Asp Thr Pro
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<210> 100
 <211> 1290
 <212> DNA
 <213> Mus musculus

<400> 100
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 ctcaagaatcc attcttttga ccgtgcaaaa gtatctttct cttgatgtac ctcaacaaaa 180
 ccctgatatc ttcattcttc ctgtgttatt ttaagccctg ggggagtaca aatctgatgc 240
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 acagagtata cacaagctct gaatttgaat ccacagtcca gaattcttga tcaatgtagt 420
 catgttactc tccttttttt tataaatgat tttagcaagc catattgaca acaatatcta 480

tattacatta tgatcgccag aagaaaggtc aatgttaagg tgatcaaaca tgggtcttggt 540
ctcagggaca ccactggaag atttgtgctg atggatccaa tcatcttata ccacaacaca 600
gaatcacact gctgaatgaa actggtcaac ccaacttcag tccaatcctg actctgtctc 660
tctggtcctc atcactgtcc tgtttgaact ggcaggaaac accattgtac tctggctcct 720
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<210> 101
<211> 207
<212> PRT
<213> Mus musculus

<400> 101

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		20						25					30		
Val	Leu	Asn	Leu	Ala	Leu	Ala	Asp	Ser	Phe	Phe	Leu	Ser	Cys	Gln	Phe
		35					40					45			
Ile	Asp	Ser	Leu	Leu	Ser	Ile	Asp	Phe	Leu	Tyr	Ala	Tyr	Lys	Leu	Ser
	50					55					60				
Lys	Asp	Ile	Leu	Gly	Asn	Ala	Ala	Ile	Val	Pro	Tyr	Ile	Ala	Gly	Leu
	65				70					75				80	
Ser	Ile	Leu	Ser	Ala	Ile	Ser	Met	Glu	His	Cys	Leu	Ser	Val	Trp	Gln
				85					90					95	
Met	Arg	Tyr	His	Cys	His	Tyr	Pro	Arg	Asn	Met	Ser	Ala	Ile	Leu	Cys
			100					105					110		
Ala	Leu	Ile	Trp	Val	Leu	Ser	Phe	Leu	Met	Asp	Ile	Leu	Asp	Trp	Phe
		115					120					125			
Phe	Ser	Gly	Phe	Leu	Gly	Glu	Thr	His	His	His	Leu	Trp	Lys	Asn	Ile
		130				135						140			
Asp	Phe	Ile	Ile	Thr	Ala	Phe	Leu	Ile	Phe	Leu	Phe	Met	Leu	Leu	Ser
	145				150				155					160	
Gly	Ser	Ser	Leu	Ala	Leu	Leu	Leu	Arg	Ile	Leu	Tyr	Gly	Phe	Lys	Arg
			165					170					175		
Lys	Pro	Leu	Ser	Arg	Leu	Tyr	Ile	Ile	Ile	Ser	Leu	Thr	Val	Met	Val
			180				185						190		
Tyr	Leu	Ile	Leu	Gly	Leu	Pro	Leu	Gly	Leu	Ser	Phe	Phe	Leu	Leu	
		195				200						205			

<210> 102
<211> 1389
<212> DNA
<213> Mus musculus

<400> 102

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gatccaaaca tctcatcca caacacagaa tctactccac tgaatgaaac tggatcatcca 120

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gtctatgtcc tcaatctggc tctggcagac tcttcttct gctgccattt cattgactct 300
ctgctatgga tcaactgactt catctatacc cataaattaa gcaaagatat cttacgcaat 360
gcagcaattg ttccctatat cgcaagactg agcgtcctca gtgctattag aatggagcac 420
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cctttagca 1389

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<210> 103
<211> 206
<212> PRT
<213> Mus musculus

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<400> 103
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Ile Tyr Thr His Lys Leu Ser Lys Val Tyr Leu Thr Gln Cys Ser Asn
          20           25           30
Phe Pro Tyr Ile Ala Arg Leu Ser Val Leu Ser Ala Ile Arg Met Glu
          35           40           45
His Leu Leu Phe Ile Leu Trp Pro Ile Trp Tyr His Cys His His Pro
          50           55           60
Arg Asn Ile Ser Ala Ile Leu Cys Ala Leu Ile Trp Val Leu Phe Phe
          65           70           75           80
Leu Met Gly Ile Leu Asp Trp Phe Phe Leu Gly Phe Leu Gly Glu Thr
          85           90           95
His His His Leu Trp Lys Asn Ile Asp Phe Ile Ile Pro Ala Phe Leu
          100          105          110
Ile Phe Leu Met Leu Leu Ser Gly Ser Thr Leu Ala Leu Leu Leu Arg
          115          120          125
Ile Leu Cys Gly Ser Arg Arg Lys Leu Leu Ser Arg Leu Tyr Val Thr
          130          135          140
Ile Ser Leu Thr Val Met Val Tyr Leu Ile Cys Gly Met Pro Leu Gly
          145          150          155          160
Leu Tyr Leu Phe Leu Leu Tyr Trp Phe Gly Ile His Leu His Tyr Pro
          165          170          175
Ser Cys His Ile Tyr Gln Val Thr Ala Leu Leu Ser Tyr Val Asp Ser
          180          185          190
Ser Ala Asn His Ile Phe Tyr Phe Leu Val Gly Ser Phe Arg
          195          200          205

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<210> 104
<211> 1420
<212> DNA
<213> Mus musculus

<400> 104
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aggaagtatc tttcccttaa tatgcctcaa caaaaccctg atatcatcat cttttctgtg 360
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cctgagttat acacaggaag aatgatgcag actatagagt aaacacaagc tctaaatttg 540
aatccacagt ccagaattct taatcccagtg tggatcatgtt actttccttt tatttataaa 600
tcatttttatt taataatgtt gacaagaata tctatattay rttatgattg ccagaagaag 660
ggtcagtgtt aatgtgctca aatatggctc gtgttctcag ggacacaact ggaagatttg 720
tgagcatgga ttcaaccatc tcatcccaca acacaawatc tacacaactg aatgaaactg 780
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<210> 105
<211> 200
<212> PRT
<213> Mus musculus

<400> 105
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Leu Leu Leu Gly Phe Pro Met His Arg Lys Ala Ile Ser Val Tyr Ile
20 25 30
Leu Asn Gln Ala Leu Ala Asp Ser Phe Phe Leu Cys Cys His Phe Leu
35 40 45
Asp Ser Met Leu Gln Ile Ile Asp Phe Tyr Gly Ile Tyr Gly His Lys
50 55 60
Leu Ser Lys Asp Ile Leu Gly Asn Ala Ala Ile Ile Pro Tyr Ile Thr
65 70 75 80
Gly Leu Ser Val Leu Ser Ala Ile Ser Thr Asp Leu Ser Ile Leu Trp
85 90 95
Pro Ile Trp Tyr His Cys His His Pro Arg Asn Met Ser Gly Ile Ile
100 105 110
Cys Ala Leu Ile Trp Val Leu Ser Phe Leu Met Gly Ile Leu Asp Trp
115 120 125
Phe Phe Ser Gly Phe Leu Gly Glu Thr His Tyr His Leu Trp Glu Asn
130 135 140
Val Asp Phe Ile Ile Thr Ala Phe Phe Ile Val Cys Phe Ser Leu Gly
145 150 155 160

Leu Leu Met Arg Ile Leu Cys Gly Gly Ile Pro Leu Ser Arg Leu Tyr
 165 170 175
 Val Thr Ile Ser Leu Thr Val Met Gly Tyr Leu Ile Cys Gly Leu Pro
 180 185 190
 Leu Gly Leu Tyr Leu Ser Leu Leu
 195 200

<210> 106
 <211> 730
 <212> DNA
 <213> Mus musculus

<400> 106
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<210> 107
 <211> 198
 <212> PRT
 <213> Mus musculus

<400> 107
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 Ile Leu Trp Leu Leu Gly Phe Arg Met Asn Arg Lys Ala Ile Ser Val
 20 25 30
 Tyr Val Leu Asn Leu Ala Leu Ala Asp Ser Phe Val Phe Leu Cys Cys
 35 40 45
 His Phe Ile Asp Ser Leu Leu Gln Asn Ile Asp Phe Ile Asn Ala His
 50 55 60
 Lys Leu Ser Lys His Ile Leu Gly Asn Ala Ala Ile Ile Pro Tyr Ile
 65 70 75 80
 Ala Gly Leu Ser Leu Leu Ser Ala Ile Ser Met Glu His Cys Leu Phe
 85 90 95
 Ile Leu Trp Pro Ile Trp Tyr His Cys His His Met Ser Ala Ile Ile
 100 105 110
 Cys Ala Leu Ile Trp Val Pro Ser Phe Leu Lys Gly Ile Leu Asn Leu
 115 120 125
 Phe Phe Ser Gly Phe Leu Gly Glu Thr His His His Leu Trp Glu Asn
 130 135 140
 Ile Asp Phe Ile Ile Thr Ala Phe Leu Ile Phe Leu Phe Met Leu Leu
 145 150 155 160
 Cys Gly Cys Thr Leu Ala Leu Glu Leu Arg Ile Leu Cys Gly Ser Arg
 165 170 175
 Lys Lys Pro Leu Ser Arg Leu Val Thr Ile Ser Leu Thr Ala Met Val

180
Tyr Leu Ile Cys Gly Leu
195

185

190

<210> 108
<211> 847
<212> DNA
<213> Mus musculus

<400> 108
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aaggtgatca aatatggcct gttttcctca gggacaccaa tgggtgattt gtttagcatg 180
gatccaacca tctcatccca caacacagaa tcacaccact gaatgaacct ggcccatccc 240
gactgcaatc caatcctggt tctgtccttt ctggctcctca tcgctgtcct ggtggaactg 300
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aggatcctcc tgtggctcca ggaggaaata cctgtccacg ctatatgtta tcatttctct 840
cacatg 847

<210> 109
<211> 192
<212> PRT
<213> Mus musculus

<400> 109
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20 25 30
Tyr Val Leu Asn Leu Ala Leu Ala Asp Ser Phe Phe Leu Cys Cys His
35 40 45
Phe Ile Asp Ser Leu Leu Gln Ile Ile Asp Phe Thr Tyr Ala His Lys
50 55 60
Leu Ser Lys Asp Ile Leu Asp Asn Ala Ala Ile Val Pro Phe Ile Thr
65 70 75 80
Gly Leu Arg Val Leu Ser Ala Ile Ser Met Glu His Cys Leu Ser Val
85 90 95
Leu Trp Leu Ile Trp Tyr His Cys His His Leu Arg Asn Met Ser Ala
100 105 110
Ile Leu Cys Ala Leu Ile Trp Val Leu Ser Phe Leu Met Ser Ile Leu
115 120 125
Asp Phe Phe Ser Glu Phe Leu His Glu Thr His His His Leu Trp Glu
130 135 140
Asn Val Asp Phe Ile Ile Thr Ala Phe Leu Ile Phe Leu Phe Met Leu
145 150 155 160
Leu Phe Arg Ser Ser Leu Ala Leu Leu Arg Arg Ile Leu Cys Gly Ser
165 170 175
Arg Arg Lys Tyr Leu Ser Thr Leu Tyr Val Ile Ile Ser Leu Thr Val
180 185 190